

# AMERICAN VETERINARY REVIEW

EDITED BY

Prof. A. LIAUTARD, M.D., V.M.,

*Member Central Society of Veterinary Medicine (Paris). Honorary Fellow Royal College Veterinary Surgeons (England). Foreign Corresponding Member Academy of Medicine, Bruxelles (Belgique).*

AND

Prof. ROBERT W. ELLIS, D.V.S.

WITH THE COLLABORATION OF

Prof. W. J. COATES, M.D., D.V.S., New York-American Veterinary College.  
OLAF SCHWARZKOPF, Veterinarian, 3d Cavalry, U. S. Army, Fort Sam Houston, Texas.  
Prof. W. REID BLAIR, D.V.S., New York-American Veterinary College.  
Prof. S. STEWART, Kansas City Veterinary College, Kansas City, Mo.  
Prof. M. H. McKILLIP, M.D., V.S., McKillip Veterinary College, Chicago, Ill.  
B. F. KAUFF, M.S., D.V.S., Commissioner of Public Health, Spartanburg, S. C.  
Prof. M. H. REYNOLDS, University of Minnesota, St. Anthony Park, Minn.  
WM. H. DALRYMPLE, M.R.C.V.S., Veterinarian, Louisiana Ag. Exp. Sta., Baton Rouge, La.  
JOHN P. O'LEARY, V.M.D., Veterinary Inspector in Charge, B. A. I., Troy, N. Y.  
A. T. KINSLEY, M.Sc., D.V.S., Path. Kansas City, Veterinary College, Kansas City, Mo.  
Prof. S. Sisson, S.B., V.S., Prof. Comp. Anat., Ohio State University, author of Sisson's Vet. Anat., etc., Columbus, O.

J. G. RUTHERFORD, V.S., H.A.R.C.V.S., Ex-Veterinary Director-General and Live Stock Commissioner, Ottawa, Canada.  
J. F. DE VRIES, D.V.S., Dept. Agr., Goshen, N.Y.  
D. ANTONIO HUGHES, Ph.D., D.V.M., Insp. Comp. Dept., U. S. Army, Chicago, Ill.  
JOHN R. MOHLER, V.M.D., Pres. American Veterinary Medical Association, Washington, D. C.  
Prof. L. A. MARSHALL, V.S., Chicago Veterinary College, Chicago, Ill.  
D. E. SALMON, D.V.M., Ex-Director of the Veterinary School, Montevideo, Uruguay.  
Prof. VERANUS A. MOORE, Director, New York State Veterinary College, Ithaca, N. Y.  
RICHARD P. LYMAN, Dean Vet. Div. Mich. Agr. College, East Lansing, Mich.  
C. J. MARSHALL, V.M.D., Sec'y A. V. M. A., Philadelphia, Pa.  
A. D. MELVIN, M.D.C., Chief of B. A. I., Washington, D. C.  
Geo. H. GLOVER, M.S., D.V.M., Director Div. Vet. Sci., Colo. Agr. Coll., Ft. Collins, Colo.  
S. A. GRUENER, M.V.S., Veterinary Inspector, Kamchatka, Russia.

And several others.

## CONTENTS.

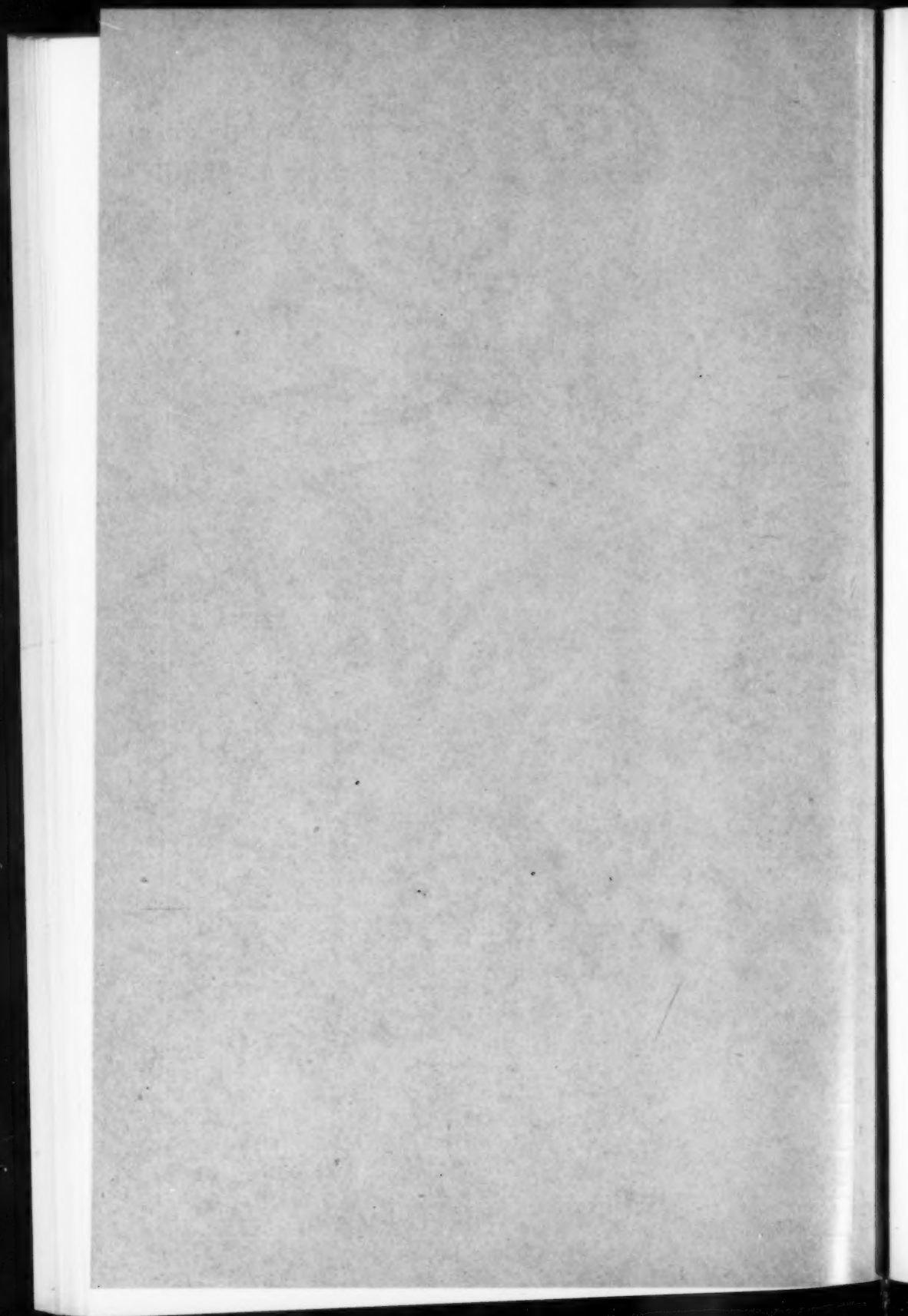
	PAGE
<b>Editorial</b> —European Chronicles.....	577
The New Angell Hospital—a Dwarfed Knowledge of Our Profession.....	586
<b>Original Articles</b> —Studies on the Etiology of Equine Influenza. N. S. Ferry, Ph.B., M.D.....	589
An Outbreak of Epizootic Abortion in Cattle. Veterinary Surgeon Desmond.....	604
Vaccination for Infectious Diseases. R. M. Staley.....	611
Anthrax. R. C. Reed.....	618
The Artificial Inoculation of Cattle with the Bacillus of Contagious Abortion. Frank M. Surface.....	624
Hock Joint Lameness. James McDonough, D.V.S.....	629
The Future of the Profession. A. H. Baker.....	634
Peptotoxin Production by the Bacillus of Contagious Abortion in Cattle. John Reichal, V.M.D., and Malcolm J. Harkins, V.M.D.....	637
<b>Reports of Cases</b> —A Facial Calculus. B. F. King, D.V.S.....	639

	PAGE
"Unusual Cases with Recovery, Met in a Country Practice." L. E. Thompson.....	642
Monstrosity. Francis Abele, Jr., V.S.....	644
"Cobbler Stick to Your Last." By Same.....	644
General Post-Mortem Lesions of Lightning Stroke in Eight Horses and Two Cows. L. B. Michael, M.D.C.....	645
<b>Abstracts from Exchanges</b> —Italian Review. A. Liautard, and E. P. Cesari, M.V.....	646
French Review. A. Liautard, M.D., V.M.....	648
<b>Correspondence</b> .....	652
<b>Society Meetings</b> —Alabama Vet. Med. Assn.....	655
Illinois State Vet. Med. Assn.....	658
Maine Vet. Med. Assn.....	660
A.V.M.A. Convention Notes.....	667
<b>News and Items</b> .....	661
<b>Veterinary Medical Assn. Meetings</b>	
<b>Publishers' Department</b>	
Index—Title Page.....	i
List of Illustrations in Volume XLIII.....	iii
Index to Authors.....	v
Table of Contents, Volume XLIII.....	vii

The AMERICAN VETERINARY REVIEW is issued on the 1st of each month. Manuscript and copy for insertion should be received by the 15th of the preceding month to insure insertion in the next month's number. Volume commences April and October.

Communications relating to publication, subscriptions, advertisements and remittances should be addressed to  
AMERICAN VETERINARY REVIEW, 509 West 152d Street, New York, N. Y.

European Exchanges, books for review and personal letters should be addressed to  
A. LIAUTARD, M.D., V.M., 14 Avenue de l'Opera, Paris, France.





# AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1913.

---

## EDITORIAL.

---

### EUROPEAN CHRONICLES.

Paris, 15th July, 1913.

PATHOGENY OF TUBERCULOSIS.—Besides the study of what may be called the *Pathogeny of Tuberculosis*, generally speaking, there is also that which may relate to some peculiar tissues or organs, and that is just the object we believe that Professors G. Petit and R. Germain of Alfort had in view when they published in the *Archives d'Anatomie Pathologique* their communication on the Pathogeny of Aortic Tuberculosis of Dog.

“This lesion which has never been mentioned in man, is rather rare, even in dogs, as among hundreds of autopsies made on tuberculous dogs during 10 or 15 years, only four cases were observed. In all those, the alterations were similar, comparable, more or less marked. They can be gathered in a general description.

“The artery is always enveloped and united to a tuberculous neoformation, closely adherent to it and evidently developed at the expense of the external coat, as demonstrated by the histological study. On the side of the cavity of the blood vessel there are observed in general several tuberculous lesions in various stages of development.

“The *first stage* is represented by a small miliary pimple

'bouton,' projecting as an hemispheric swelling; on its surface and in a small surface around it, the end-artery has lost its transparency, it is wan and whitish. A section, made at that point, shows that the pimple corresponds to a small caseous tubercle, developed in the thickness of the blood vessel. Generally, there are a great number of these pimples, more or less prominent.

"In the *second stage* there is a small ulceration rather irregular, not deep, and ordinarily filled and concealed with a little fibrin. Round this the end-artery is still whitish and rough; on its level the mesartery has disappeared.

"The *third stage*, which the authors met but in one case, is characterized by the complete transversal rupture of the blood-vessel, in the middle of a large tuberculoma, which prevents a fulminant hemorrhage.

"The edges of the rupture are loose and shrunk, and between them exists a true anfractuous cavity, concealed by fibrin, which keeps up the continuity of the vascular lumen."

The very complete histological study made by Petit and Germain permits them to explain precisely the pathogeny which is resumed in few propositions.

\* \* \*

"The *essential* condition of the evolution of the pathological process is the specific (bacillar) emboli of the vasa-vasorum, which, in the dog, are as is in man, localized to the peri-artery.

"The thrombosed capillary becomes the starting point of a tuberculous neoformation, which spreads first in the peri-artery; this membrane then gets thicker and a tuberculoma, sometimes very large, can develop at its expense.

"The mesartery, or middle coat, deprived of its nutritive blood vessels and attacked also by the toxines of the tuberculous centre, developed by its direct contact, becomes degenerated as shown by the coagulating necrosis of the unstriated muscular cells. The elastic lamellae resist a longer time, but still become less and less colored.

" Soon the necrosed mesartery is in its turn invaded from the periphery towards the centre, by the spreading tuberculous center, which gradually becomes calcified. Then the end-artery is affected; even before the mesartery is diseased through, it reacts by getting thicker.

" Finally the caseification reaches the thickened end-artery and raises it. The initial 'pimple' is then formed. The tuberculous center, which has thus passed through the mesartery, is separated from the circulating blood only by the thickened end-artery, which soon is invaded in its turn, when it becomes covered by a deposit of fibrin on its surface.

" On account of the pressure of the blood, the mesarterial rupture has a tendency to get larger and larger, finally the *end-artery gives way* and the almost fluid caseous contents of the tuberculous deposit is thrown in the circulation; the ulceration is then formed, a kind of small diverticulum or aneurism by rupture, whose bottom is formed by the thickened peri-artery; the unadherent end-artery lines a part of it, the remainder is covered with fibrin. As to the transversal rupture, it is the ultimate stage of the lesion and results from the progressive enlarging of the ulceration, when the peri-arterial tuberculoma surrounding the blood vessel undergoes caseification all around.

" The importance, in the genesis of the ulcerations, of the mechanic factor resulting from the pressure of the blood in the aorta, finds its evidence in the comparison of the tuberculous lesions of this vessel with those, equally specific in the vena cava, observed in another dog. Indeed, in the vein, the lesion begins the same way, runs through the coat of the vessel and becomes projecting in the endovena to such an extent as to fill the entire vascular lumen. However, although caseous, this lesion never opens into the blood, as this exercises no pressure on the lesion.

" Finally the mesartery once reached by the tuberculous process, the lesion develops like the atheromatous pustula described in man.

" The interesting fact is the necessity of a *primitive thrombosis of the vasa-vasorum* for the mesartery to be affected in

its turn. Thus is explained the rarity of those lesions, when so often the aorta, as in dog and man, is more or less surrounded and enveloped by tuberculous neoformations, particularly developed at the expense of the tracheo-bronchic lymph glands.

"In this last case, as demonstrated by histology, the vasa-vasorum remain sound, which allows the peri-artery to continually throw out new layers of reacting tissue serving to the extension of the tuberculous process and yet keeping it sufficiently at a distance from the mesartery, unable to resist by itself."

\* \* \*

CARDIAC REVIVISCENCY.—The very interesting and wonderful results that have been obtained by Prof. Carrel at Rockefeller Institute of New York have stimulated the attention of other investigators and given rise to publications more or less related to the conditions of the valuable phenomenas of *survie* realized by the eminent savant in America. Among those, there appears one on *Cardiac Reviviscency*, published in the *Presse Medicale*, which attracts attention.

Contrary to old medicine, which, placing the seat of the soul in the heart, thought that its stopping was the first phenomena of death, later it was recognized the "ultimum morieus." Without doubt, the heart is the organ whose vitality is the greatest, and the famous experiments of Kuliabko have given of it the greatest demonstration by showing that its reviviscency was possible a long time after death. These experiments of reviviscency begin, after all, but a new and original proof of the *survie* of the organ, or of the cells outside the organism, with a possible retaining of their functional activity. \*

In 1902, Kuliabko, taking the heart separated from an animal dead for a certain number of hours, washed out its blood by passing through it a current of oxygenated Locke's fluid at 39 degrees, and saw the beatings of the organ reappear. He made the same observations on human hearts.

The rhythmical contractions of the heart reappeared after the fluid had run in, and lasted for the duration of the experiment (3 hours). If the heart was again placed in the cooling box, the same phenomenon could again be reproduced the next day, or even the following day, by starting over again the artificial circulation.

This reviviscency of the heart can be obtained quite a long time after death. In animals, rabbits, pigeons, birds, the beatings return after three and five days, whether the animal has been killed or has died with disease. With a rabbit's heart, dead through acute enteritis with nephritis, and taken away fourteen hours after death, the beatings of the heart returned after the current of Locke's fluid had been run through it. The experiment lasted three hours, and similar results were obtained the next day, and the one following. The fourth day, 112 hours after death, some rhythmical contractions quite energetic were observed after a half hour of flow of the fluid. Even five days after death this return of cardiac activity has been realized and kept up for forty-eight hours, viz., a prolongation of seven days of the cardiac vitality.

Similar experiments gave similar results with human hearts. Seven positive results being obtained in ten experiments.

These experiments have been carried on with similar results by other scientists. One of them, Hering, who had already observed that the artificial irrigation of the heart after death would keep up for a long time the activity of the extra-cardiac nerves, noticed also in monkeys, the reviviscency of the cardiac nerves. He obtained a return of the activity of the pneumogastric after six hours of arrest, and of that of the accelerators, whose vitality is then greater, after fifty-four hours.

Those experiments of reviviscency of the heart do not deserve that name, as they merely bring more in evidence the persistency of the vitality of the heart after quite a considerable interruption of its beatings. They are nevertheless very interesting as proofs of the *survie* of organs, specially of the heart, in warm blooded animals, which is greater than was generally supposed.



And again, they tend to demonstrate that the heart stops beating, not because it has lost its vitality, but because of the products of the metamorphosis or of the accumulated toxics, which the washing with the Locke's fluid removes.

The persistency of the vitality is not, however, the same for every part of the heart, the right auricle is the last to die.

All those experiments of *survie* are at the base of all the attempts made for the transplantation of organs. The conditions in which they occur have not yet been the objects of many studies, but physiologists are hard at work and very valuable information can be expected at an early date.

\* \* \*

INTESTINAL MICROBIAN FLORA.—In an article published some time ago, the inquiries relating to the microbial flora of the large intestines of horses were made known by Doctor J. Choukevitch of the laboratory of Prof. Metchnikoff, at Pasteur Institute. The microbes that had been discovered, as most predominant, were *Bacterium Coli*, *Streptococci* and *Enterococci*. Along these species there was also observed those which promote putrefaction, those which produce fermentation of cellulose and starch, and also other microbes whose action must certainly be injurious to the organism. But these last, however, are in smaller number than the streptococci, enterococci and bacterium coli already mentioned; they have a secondary effect, due probably as a certain compensation to the excessive volume of the large intestine of horses.

Following his researches Doctor Choukevitch has asked himself if the intestinal flora of horses was to be found again in other herbivorous animals, or if there was for each species of these animals a special type of intestinal flora, depending upon the food absorbed. It is evident that the point in question applies to the typical representants of herbivorous animals, viz., animals whose principal regime consists in hay and grass, and whose intestines

are adapted to this food. And that again, in animals fed with rich food of vegetable nature (bread, grain), and whose intestine is not yet adapted to this exclusively vegetable regime, the conditions which regulate the development of microbes shall differ, and it would then be possible that the intestinal flora of such animals, even if submitted to an exclusively herbaceous regime shall have a different flora from the typical herbivorous animals.

In this new field of researches the bacterian flora of the large intestines of bovines and ovines, being selected as typical species of herbivorous animals, the caecum and colon of these animals were used for materials, with the results that the microbial flora of these large intestines was similar to that of horses and rested on fundamental characters.

In all these animals there is found many microbial species, a great number of which ought to be considered as injurious to the life of the organism. These, however, develop, imperfectly and slowly, and the predominating forms (*B. coli*, enterococci and streptococci) are in much greater number. The type of intestinal flora of horses is not specific to that animal. It is met with in other herbivorous animals, which nevertheless have a very different digestive canal.

\* \* \*

A WISE SUGGESTION.—Under the heading of Bi-centenary of the stamping-out method of contagious diseases of animals, Mr. Henry Gray, M.R.C.V.S., makes a suggestion which we hope will be entertained by the Committee of the International Veterinary Congress which is to meet next year in London. The suggestion made in the *Veterinary Record* reads as follows:

“Just two hundred years have elapsed since Giovanni Lancisi, physician to Pope Clement XI, recommended the Italian Government to poll-axe all cattle suffering from rinderpest, then (1793) raging in Italy.

“From this distinguished man’s writings (1713-1714) and those of his compatriot Ramazzini (1711), one gathers, when

compared with our present knowledge of the disease, very little of practical value has been really advanced since that period.

"It was, however, left to our countryman Thomas Bates, surgeon to King George I, to put this practical and radical method into force in order to eradicate totally the disease when raging in England in 1714. The object sought for by this method was accomplished in a few months.

"Undoubtedly the experience then gained was totally ignored or tardily put into practice by our government, when the disease was introduced again at various periods during the eighteenth century, and again in 1865, when John Gamgee, more enlightened than any of his contemporaries, was not listened to until our herds had been practically decimated.

"However, next year, when the International Veterinary Congress will meet in London for the time, and to celebrate its jubilee in honor of its hitherto unrewarded founder, John Gamgee, will be the bi-centenary of the adoption of the method by Thomas Bates, now in general vogue in the United Kingdom and some other countries, and to a lesser degree, in consequence of geographical considerations, in certain other countries.

"It is to be hoped that these three great men, Lancisi, Bates and Gamgee, will have some permanent homage paid to their memories and to the distinguished services they have bestowed on the world."

\* \* \*

BIBLIOGRAPHIC NOTICES.—*Pathologie Interne* (Internal Pathology) is the new addition that Prof. Cadeac has just made to the second edition of his Encyclopedia, which it has been our pleasant duty to notice on several occasions in the REVIEW.

The present volume treats of the blood and its many affections. Part 6th of the preceding book it considers in the usual method adopted by the author of the various diseases of the different species of animals, and offers in the thirty-four chapters that it contains valuable information on Infectious Pseudo-rabies,

Diphtheria of fowls, Vaccinia, Variola Melitococci fever, Infectious agalaxia, Distemper, Anasarca, Gangrenous Coryza, Pyosepticemia of the new born, Cholera, Hemorrhagic Gastro-enteritis, Bradsot, Piroplasmosis, Plasmodiosis, Leucocytozoars, Trypanosomes, Spirillosis, Filariasis, Embryonar hematozoars, Strongylosis, Bovine Bitharziosis.

The work is handsomely illustrated with 142 plates. The house of J. B. Bailliere & fils is publishing it.

\*  
\*   \*  
\*

Dr. E. A. Weston, of Tasmania, Australia, has favored us with a copy of the *Proceedings of the Public Health Congress of Western Australia*, which took place in October last. Amongst the valuable and interesting papers which were presented to the meeting are those of Dr. R. C. E. Atkinson on the Prevention of Disease; of Dr. G. A. Greenhill, on Meat Inspection; of Dr. R. M. Mitchell on some phases of the tuberculosis question, and that of Dr. E. A. Weston on animal tuberculosis in relation to man. Those papers have no doubt received in the Congress the proper appreciation that they deserve, and show how questions of veterinary importance will always find proper advocates no matter where they may be offered. Their influence will always be felt.

\*  
\*   \*  
\*

BIBLIOGRAPHIC ACKNOWLEDGEMENTS.—*Agricultural Journal of the Union of South Africa*, March, 1913.

*Proceedings of Public Health Congress of Western Australia*, with communication from Dr. E. A. Weston, of Tasmania.

*First Annual Report of the Commissioner of Animal Industry*, 1912, of Massachusetts.

*Annual Report of the Louisiana Department of Agriculture* for 1912, with a masterly address from Dr. W. H. Dalrymple

on "Southern Live Stock Possibilities, with special reference to Louisiana."

*The Fourth Season's Report Upon the Value of the Ventricle Stripping Operation for Roaring*, by Prof. Fred. Hobday.

Bulletin of the Michigan Agricultural College, *Division of Veterinary Science*.

*Archives of Biological Sciences* (Archives des Science biologiques), published at the Imperial Institute of Experimental Medicine, St. Petersburg, Volume 17, No. 4.

From the Experiment Station of the Michigan Agricultural College, Bulletin No. 6, on *Hog Cholera Serum* and Protection against Hog Cholera; No. 8 on *Studies of Agglutination Reactions in Hog Cholera*; No. 12 on *Tuberculosis in Fowls*; No. 13 on *What is the Antigen Responsible for the Anti-bodies in Dorset-Miles Serum*, all by Ward Giltner, D.V.M., Assistant, Professor of Bacteriology and Hygiene.

A. L.

---

#### THE NEW ANGELL HOSPITAL—A DWARFED KNOWLEDGE OF OUR PROFESSION.

In an article in the *Boston Transcript* of August 13, 1913, entitled "The M. S. P. C. A.'s New Angell Hospital—Harvard Doctors to Co-operate," Benjamin Baker describes in detail the plans of an up-to-date hospital for animals that is to be built in Boston; and holds out the hope that when it is completed an opportunity will be afforded for enlightenment on diseases of animals. Mr. Baker's limited knowledge of the subject upon which he writes may be inferred by the following paragraph, under the caption "High Medical Skill for Animals." He says: "Study by the directors of the society of the actual nature of animal work at the Medical School, and of the actual men who were engaged in it, could not and did not fail to show that animals have more to gain from treatment in a hospital by men of the first scientific rank who had studied animals for years than they could have under the ordinary veterinarian." In a



previous paragraph, Mr. Baker had displayed an equal lack of knowledge of veterinary surgery by the following: "A common way of treating horses for quittor, which is a *pus inflammation of the hoof*, is to run red hot irons up through the hoof until the points of these cauteries emerge in the coronary band at the crest of the hoof." Further along he displays his innocence of the most commonplace conditions and customs in veterinary medicine by the following paragraph: "It appeared that in the Huntington Laboratory each sick animal was treated just like a human being in a hospital. The record for each animal included a description of the animal and its condition when brought in for treatment; it had a clinical chart on which were recorded the daily observations of pulse, temperature and other matters that are familiar on the charts of human patients in hospitals. Each operation on an animal was recorded with the same care." Mr. Baker will be surprised to learn that we had observed charts just as complete in the hospital of the American Veterinary College in New York City more than twenty-five years ago. And that is why we are criticizing the article in question. Not because we are not in full sympathy with the project, which we understand is, in addition to caring for animals, a comparative study of human and animal ills, and not because we do not commend Mr. Baker for his enthusiasm in behalf of the dumb animals, as we are in full sympathy with *all* those sentiments, but because Mr. Baker, in his enthusiasm and the fullness of his heart for our dumb friends, criticizes an enlightened profession in this country to-day, from the standpoint that it might have been judged forty years ago. His article also places the medical men of Harvard in a wrong light before the public, as being the emancipators of veterinary medicine in bringing it up to standards which these men, versed on general scientific advancement, must know it has surpassed a decade ago. Mr. Baker should know that the veterinarian of to-day is the highest authority on diseases of animals, and is in a position to advise his brothers in the medical profession on matters of transmissible diseases of animals to man. He is also very generally engaged in popular

education, and is constantly enlightening the public and removing the superstitions in regard to the treatment and cure of animal diseases. Mr. Baker evidently recognizes these facts in their application to heads of veterinary colleges, and in veterinarians holding high official positions, as he mentions among those who are to disseminate the knowledge in regard to the diseases of animals through lectures, at their new institution, several veterinarians of that class; and we are sure that after he has listened to some of those gentlemen's addresses, and through his keen interest has had a better acquaintance with veterinarians generally, he will realize that the teachings that his article suggests are to be brought forth before the world as *new* doctrines are being taught to the public by general practitioners all over this great universe every day, and have been for many years past. We congratulate the horse owners and owners of other animals on the creation of the excellent institution that Mr. Baker has described in his article, which shows it to be a most palatial and at the same time substantial edifice, and predict that in some of his future articles he will recognize the present standing of the American veterinary profession, which we are sure he will fully appreciate after a closer and more extensive acquaintance of veterinarians.

\* \* \*

AMERICAN VETERINARY MEDICAL ASSOCIATION.—On page 667 of this issue, will be found some notes on the A. V. M. A. meeting in New York, which was already in session when our front forms were on the presses; so that our readers, while waiting for the story of the meeting in the October number, will be in possession of some of the interesting facts in connection with it.

A CORRECTION.—In our sketch of the itinerary of the "Study Tour of Europe for American Veterinarians," in our August number, an error appears in regard to the cost of the trip, which should read \$595.00 instead of \$505.00.

## ORIGINAL ARTICLES.

---

### STUDIES ON THE ETIOLOGY OF EQUINE INFLUENZA.\*

BY N. S. FERRY, PH.B., M.D., DETROIT, MICH.

---

After a careful review of the literature on equine influenza, one must be convinced that little is known about the etiology of the disease. Moore, in his text-book on the Pathology of Infectious Diseases of Animals, has very tersely defined the term, *equine influenza*: "Influenza is a generic term employed to designate a large variety of symptoms." Hutyra and Marek, in their "Spezielle Pathologie und Therapie der Haustiere," have concluded upon the etiology of the disease as follows: "The primary cause of the contagious character of the disease is at the present time not thoroughly understood. From the bacteriological investigations, thus far, is shown only the fact that two bacteria predominate, the *Streptococcus equi* and *Bacillus equi septicus*." Friedberger and Fröhner admit that the cause of the disease is unknown. Law, who has given the literature on the subject a thorough review, says: "Our knowledge of the bacteria of equine influenza is as yet very imperfect and uncertain."

The two possible clinical entities, equine contagious pneumonia and strangles, so frequently occur side by side in the same stable and are so often found following symptoms diagnostic of influenza that some authorities have considered them to be in some way associated. The situation, however, relative to the etiological factors concerned is in somewhat of a chaotic state.

---

\* Read at the meeting of the Society of American Bacteriologists in joint session with the American Association for the Advancement of Science, Washington, D. C., December 27 to 30, 1911. Reprinted from *Collected Papers. From the Research Laboratory of Parke, Davis & Co., Detroit, Mich., Volume i.*

It is an interesting fact that, although a streptococcus, presumably the *S. equi* of Schütz, has been found at one time or another by different observers in all of these conditions, yet, for lack of conclusive proof to the contrary, authors must still continue to treat them as separate and distinct diseases.

The *S. equi* was first described by Schütz in 1888, and identified by him and also by Sand and Hensen, independently, as the cause of strangles. It is found so constantly in the lesions which always accompany this disease that it has become recognized by practically all authorities as its cause. Some, also, associate this streptococcus very closely with contagious pneumonia of horses; in fact, streptococci have been found generally in pure cultures from the lungs and pleural exudate by all observers. Lignières, on the other hand, who first described a cocco-bacillus as the cause of influenza the *Bacillus equi septicus*, claimed to have found the same organism in strangles and contagious pneumonia, and argued that the *S. equi* was a secondary invader in these conditions. The large majority of observers have not corroborated Lignières' findings, and, therefore, his conclusions are not generally accepted.

The work which is the subject of this paper was started in November, 1910, at the stockyards in Kansas City, where the writer had plenty of opportunity to study the disease in all its stages, and also to study at the same time the conditions known as contagious pneumonia and strangles. It was my aim at first to determine the micro-organisms predominating in the cultures taken from horses suffering with influenza, in the early and acute stages, and later, if possible, to draw some conclusions as to the relationship of the disease to equine contagious pneumonia and the disease known as strangles. Horses were watched very carefully for the first indication of any abnormal condition, which, in the majority of cases, proved to be a rise in temperature. As soon as this rise made its appearance, and in some instances in anticipation of it, irrespective of any other symptoms, cultures were taken from the eyes, nostrils, trachea and, later on, from the pus from abscesses in cases of strangles. Blood cultures were

obtained several months later from a large hospital in New York City, and also from a hospital adjoining the stockyards of East St. Louis. It was found, contrary to the reports of some observers, that symptoms indicative of infection of the lower respiratory tract preceded those of the eyes and nostrils, namely, a slight husky cough, with, at times, labored respiration. Cultures, therefore, were always taken at once from trachea.

In taking the tracheal cultures the following procedure was adhered to: The neck of the animal was shaved over the lower trachea and rendered as clean as possible with soap and germicidal solutions. Through a short incision into the skin a large sterile trocar and cannula was passed downward directly into the trachea between the cartilaginous rings. The trocar was withdrawn and through the cannula was passed a sterile swab on a long, stiff wire. Using this method, cultures may be taken directly from the lower trachea, eliminating at once contaminating organisms, which are found normally in the upper air passages, and, as secondary invaders, greatly increased in disease. One is able to approach, at the same time, very close to the bifurcation of the trachea and thus obtain exudates directly from the lungs—a very valuable aid in those cases where pneumonia complications are suspected.

Following are the histories of the horses, with the results of the bacteriological findings:

November 28, 1910.—Horse 1. Age, 10 years. Recovering from an acute attack of influenza; at present suffering with purpura; nose, legs and abdomen swollen; very weak condition; unable to move; no cough, slight discharge from nose; temperature,  $103.5^{\circ}$ ; cultures taken from nose and trachea. *Results:* Nose *Staphylococcus aureus* and *B. pyocyaneus*. Trachea, no growth.

November 28, 1910.—Horse 2. Age, 4 years. Early stages; very sick; respiration labored; cough; slight discharge from nose; temperature,  $104^{\circ}$ ; cultures taken from trachea. *Results:* *Streptococcus*, pure.

November 27, 1910.—Horse 3. Age, 5 years. Early stages;



very sick; congestion of lungs; slight discharge from nose; temperature,  $104.5^{\circ}$ ; cultures taken from trachea and nose. *Results:* Nose, *Staph. aureus*; trachea, streptococcus.

November 29, 1910.—Horse 4. Age, 5 years. Recovery from typical attack of influenza; sick about ten days; temperature,  $103^{\circ}$ ; no cough; cultures taken from trachea. *Results:* Streptococcus.

December 1, 1910.—Horse 5. Age, 7 years. Early stages; very sick; beginning congestion of lungs; temperature,  $104.2^{\circ}$ ; cultures taken from trachea. *Results:* Streptococcus.

December 1, 1910.—Horse 6. Age, 5 years. Typical attack of influenza past week; recovered from acute symptoms; severe cough at present; had chill November 31, 1910; temperature,  $103^{\circ}$ ; cultures taken from trachea and nose. *Results:* Nose, *Staph. aureus* and *citreus*; trachea, streptococcus.

December 3, 1910.—Horse 7. Recovered from typical attack of influenza; suffering with strangles at present; abscess of submaxillary glands; cultures taken from pus of abscess. *Results:* *Staph. albus*; no growth of streptococcus in cultures.

December 5, 1910.—Horse 8. Age, 8 years. Exposed one week; first symptoms just beginning to appear; nasal mucous membrane congested; slight watery discharge from nose; temperature,  $102^{\circ}$ ; cultures taken from trachea and nose. *Results:* Nose, streptococcus; trachea, streptococcus.

December 5, 1910.—Horse 9. Age, 4 years. Exposed one week; legs slightly swollen; slight discharge from nose; temperature,  $103.5^{\circ}$ ; cultures taken from trachea and nose. *Results:* Nose, *Staph. aureus* and *albus*; trachea, no growth.

December 7, 1910.—Horse 10. Exposed one week; severe cough; no discharge from nose; temperature,  $103^{\circ}$ ; cultures taken from trachea and nose. *Results:* Trachea, streptococcus; nose, *Staph. albus* and *aureus*.

December 7, 1910.—Horse 11. Exposed one week; temperature,  $102^{\circ}$ ; no other symptoms; culture taken from trachea. *Results:* Streptococcus and *Staph. albus*.

December 8, 1910.—Horse 12. Second day of symptoms;

temperature,  $104^{\circ}$ ; cultures taken from trachea. *Results*: Streptococcus; *Staph. albus* and *aureus*.

December 10, 1910.—Horse 13. Strangles; cultures from pus. *Results*: Streptococcus; *Staph. albus* and *aureus*.

December 10, 1910.—Horse 14. Strangles; cultures from pus. *Results*: Streptococcus and *Staph. albus*.

December 11, 1910.—Horse 15. Symptoms just appeared; was brought in supposedly foundered; temperature,  $104^{\circ}$ ; congestion of lungs; labored breathing; very sick; cultures taken from trachea and nose. *Results*: Trachea, streptococcus, pure; nose, *Staph. albus* and *aureus*.

December 14, 1910.—Horse 16. Typical influenza; recovered from acute symptoms; cultures from nasal discharge. *Results*: *Staph. albus*.

December 14, 1910.—Horse 17. Typical influenza; recovered from acute symptoms; cultures from nasal discharge. *Results*: *Staph. albus* and *aureus*.

December 14, 1910.—Horse 18. Typical influenza; recovered from acute symptoms; cultures from nasal discharge. *Results*: *Staph. albus* and *aureus*.

December 14, 1910.—Horse 19. Typical influenza; recovered from acute symptoms; cultures from nasal discharge. *Results*: Streptococcus and *Staph. albus*.

December 15, 1910.—Horse 20. Only symptoms, slight rise in temperature; exposed four days; took culture from trachea. *Results*: *Staph. aureus*.

March 22, 1911.—Horse 21. Typical, acute influenza; early stages; rather labored breathing; slight cough; no discharge from eyes or nostrils; temperature,  $104^{\circ}$ ; no cough; cultures taken from trachea. *Results*: *Staph. aureus* and *albus*.

March 22, 1911.—Horse 22. Recovered from acute stage; slight discharge from nose; purulent; temperature,  $100^{\circ}$ ; no cough; cultures taken from trachea. *Results*: No growth.

March 22, 1911.—Horse 23. Horse died in acute stage of a typical case of influenza; cultures taken from trachea. *Results*: Pure culture of streptococcus.

March 22, 1911.—Horse 24. Later stage of typical attack; yellow purulent discharge from nostrils; cultures taken from trachea and nostrils. *Results:* Trachea, streptococcus and *Staph. aureus*; nostrils, streptococcus and *Staph. aureus*.

Horse 25.—Early case of strangles; young colt isolated in small stable; no other cases in town; stable was used as a livery stable several years previous, in which many cases of influenza and strangles had occurred; only symptom was small submaxillary abscess; history of slight cough two weeks previously; cultures taken from trachea and abscess. *Results:* Trachea, streptococcus, pure; abscess, streptococcus and *Staph. albus*.

*Conclusions.*—18 tracheal cultures were taken, with the result that the streptococcus was found 14 times, nearly pure. The staphylococcus was the contaminating organism usually found. The streptococcus was found twice out of the three cases of strangles from which cultures were taken. The streptococcus was found uncontaminated in the trachea of one case of so-called strangles, while the streptococcus and *Staphylococcus albus* were found in the pus of the submaxillary abscess.

#### BLOOD CULTURES.

As all blood cultures were obtained from horses which had been placed in the hospitals for treatment by private individuals, shaving or clipping of the hair at the site of operation had to be dispensed with, so it is very probable that the presence of some of the organisms found in the cultures was due to accidental contamination. From 10 to 20 c.c. of blood were drawn from the jugular vein of each horse, planted in flasks, and then shipped to the laboratory where the remainder of the work was carried on. Cultures were obtained from thirty horses with the following results: 10 contained a streptococcus alone, 10 contained a streptococcus and others, 1 contained a large bacillus alone, and 9 gave no growth; 20 out of 30 cultures contained a streptococcus. The contaminating organisms were either a staphylococcus or the *Bacillus subtilis* in the majority of cases.

Following are the histories of these horses with the bacteriological findings of each:

30.—Black gelding; weight about 1,200 lb.; 9 years old; in fair condition physically; suffering with acute influenza. The following symptoms were noticeable: Pulse, 55; temperature,  $104^{\circ}$ ; respiration, 32; head drooping; coat rough; staring and animal depressed in general; conjunctiva slightly congested; eyelids swollen and watery; slight cough; lungs slightly involved; this animal was suffering from the disease when unloaded from car. *Bacteriological finding*: No growth.

31.—Gray gelding; weight, 1,200 lb.; about 7 years old; this animal had a very mild form of the disease; at the time the blood was obtained the pulse was 40; temperature,  $103^{\circ}$ ; respiration, 26; was not off feed; no complications. *Bacteriological finding*: Streptococcus.

32.—White face, roan gelding; about 8 years old; weight, 900 lb.; pulse, 40; respiration, 25; temperature,  $102.4^{\circ}$ ; was suffering with influenza upon arrival in city; not a severe case; eyes swollen and discharging serous material; appetite somewhat impaired; a slight laryngitis accompanied the disease. *Bacteriological finding*: No growth.

33.—Bay gelding; 8 years old; weight about 1,300 lb.; suffering with influenza and laryngitis; coughs frequently and a marked depression noticeable; pulse, 55; respiration, 30; temperature,  $103^{\circ}$ ; no discharge from eyes, nor do they seem abnormal in any way; no complications other than sore throat. *Bacteriological finding*: No growth.

34.—Black gelding; about 9 years old; weight, 1,200 lb.; diagnosis, influenza complicated with pneumonia; animal suffering intensely, having difficulty in breathing; somewhat emaciated; pulse, 60; temperature,  $104^{\circ}$ ; respiration, 35; short, jerky movements; eyes expressionless and partially closed; slight non-purulent discharge from eyes; abdominal breathing; off feed. *Bacteriological finding*: Streptococcus.

35.—Bay gelding; 6 years old; weight, 1,100 lb.; coach horse; in good physical condition, the attack inconveniencing the animal

but little; uncomplicated, very mild attack; one eye (right) closed and very sensitive; pulse, 40; respiration, 22; temperature,  $105^{\circ}$ ; good appetite; very active. *Bacteriological finding*: Streptococcus.

36.—Black gelding; 8 years old; weight about 1,200 lb.; Percheron; symptoms of influenza; animal depressed; head drooping; pulse, 40; temperature,  $107^{\circ}$ ; respiration, 28; off feed. *Bacteriological finding*: No growth.

37.—Black gelding; 9 years old; weight, 1,600 lb.; diagnosis, influenza, complicated with pneumonia; very severe case anorexia, dyspnoea and epistaxis (left nostril); trembling in shoulder; tucked up abdomen; discharge from both eyes; pulse, 60; temperature,  $105^{\circ}$ ; respiration, 35; pulse very irregular and weak; limbs very warm. *Bacteriological finding*: Streptococcus and others.

38.—Bay gelding; shire; 6 years old; weight, 1,400 lb.; diagnosis, influenza and pneumonia; animal had dejected appearance; standing with fore legs spread well apart, head drooping and panting; pulse, 40; respiration, 36; temperature,  $106^{\circ}$ ; prognosis doubtful. *Bacteriological finding*: No growth.

39.—Gray gelding; 8 years old; broncho stock; very wild and treacherous; temperature,  $102.5^{\circ}$ ; respiration, 26; eyes slightly swollen and discharging; pulse, 42; appetite impaired; no apparent complications; influenza. *Bacteriological finding*: No growth.

40.—Bay gelding; 6 years old; weight, 1,000 lb.; influenza; very severe case; eyes clear; breathing hurried; lips dry and parched; general depression in evidence; pulse, 55; temperature  $105.8^{\circ}$ ; respiration, 40; refuses feed and seems to be semi-conscious. *Bacteriological finding*: Streptococcus and others.

41.—Bay gelding; 7 years old; received in recent shipment from the west; acute case of influenza; temperature,  $105.8^{\circ}$ ; respiration, 35; pulse, 70; marked general depression. *Bacteriological finding*: Streptococcus.

42.—Bay mare; 9 years old; sick upon arrival in city, with influenza complicated with pneumonia; breathing heavily; de-



pressed; temperature,  $104.6^{\circ}$ ; respiration, 30; pulse, 75; animal very weak. *Bacteriological finding*: Long wide bacillus.

43.—Gray mare; 5 years old; received at hospital June, 1911; mild case of influenza; temperature,  $106.2^{\circ}$ ; had high fever for two days; appetite slightly impaired. *Bacteriological finding*: Streptococcus.

44.—Roan gelding; 6 years old; temperature,  $105.2^{\circ}$ ; respiration, 28; pulse, 65; conjunctiva congested and profuse lachrymous discharge from both eyes; off feed and very weak; slight cough. *Bacteriological finding*: Streptococcus and long narrow bacillus.

45.—White gelding; 7 years old; temperature,  $104.8^{\circ}$ ; respiration, 35; pulse, 70; laryngitis and cough; conjunctiva congested. *Bacteriological finding*: No growth.

46.—Bay gelding; heavy draft animal; 6 years old; temperature,  $105.6^{\circ}$ ; pulse, 50; respiration, 30; off feed; head drooping; very listless; considerable cough; been in hospital two days. *Bacteriological findings* Streptococcus.

47.—Black mare; coach horse; about 6 years old; influenza complicated with laryngitis; lungs also involved, as evidenced by difficult breathing; temperature,  $106^{\circ}$ ; respiration, 38; pulse, 80. *Bacteriological finding*: Streptococcus and others.

48.—Berkshire pony; 4 years old; mild case; temperature,  $104.6^{\circ}$ ; pulse, 44; respiration, 28; animal not off feed; slight cough. *Bacteriological finding*: Streptococcus and bacillus.

49.—Bay mare; draft animal; temperature,  $106.2^{\circ}$ ; pulse, 68; respiration, 40; marked depression; coat rough; staring; eyes expressionless, back arched; severe cough; shows nervous derangement; reeling and staggering at times, being in a dazed condition. *Bacteriological finding*: Streptococcus.

50.—Bay mare; 6 years old; mild case; temperature,  $105^{\circ}$ ; pulse, 30; respiration, 26; appetite slightly impaired. *Bacteriological finding*: No growth.

51.—Bay mare; 5 years old; draft; influenza and congestion of the lungs; temperature,  $105.4^{\circ}$ ; pulse, 12; respiration, 35; breathes heavily and is very weak; occasionally breaks out in

cold, clammy sweat. *Bacteriological finding*: Streptococcus and others.

52.—Black gelding; 7 years old; very mild case; temperature,  $104.2^{\circ}$ ; pulse, 48; respiration, 29; conjunctiva slightly congested; Schneiderian membrane inflamed and watery discharge from nostrils; a recent case. *Bacteriological finding*: Streptococcus.

53.—Black mare; 7 years old; influenza complicated with pneumonia, the pneumonia symptoms being more pronounced; labored breathing, double; temperature,  $106.2^{\circ}$ ; pulse, 82; respiration, 36; right eye closed; watery discharge from nostrils; cough. *Bacteriological finding*: Streptococcus.

54.—Gray gelding; 8 years old; coach; recently arrived from the West; temperature,  $104.8^{\circ}$ ; pulse, 49; respiration, 32; off feed; listless appearance and depressed in general; no cough, throat sore. *Bacteriological finding*: Streptococcus and bacillus.

55.—Bay mare; 9 years old; mild attack; temperature,  $103.8^{\circ}$ ; pulse, 46; respiration, 34; impaired appetite only noticeable symptom. *Bacteriological finding*: Streptococcus and others.

56.—Bay gelding; 7 years old; pulse, 68; temperature  $105^{\circ}$ ; respiration, 32; off feed and depressed. *Bacteriological finding*: Streptococcus.

57.—Bay mare; 9 years old; suffering with influenza, complicated with pneumonia; pulse, 74; temperature,  $105.6^{\circ}$ ; respiration, 36; refuses feed; coughs; watery discharge from eyes and nostrils; conjunctiva inflamed; very weak. *Bacteriological finding*: No growth.

58.—Mule; typical influenza. *Bacteriological finding*: Streptococcus.

59.—Mule; typical influenza. *Bacteriological finding*: Streptococcus and others.

The results of the examination of the blood cultures were as follows:

Horse 30, No growth.  
 " 31, Streptococcus.  
 " 32, No growth.

Horse 33, No growth.  
 " 34, Streptococcus.  
 " 35, Streptococcus.

Horse 36, No growth.	Horse 48, Streptococcus plus Bacillus.
" 37, Streptococcus plus others.	" 49, Streptococcus.
" 38, No growth.	" 50, No growth.
" 39, No growth.	" 51, Streptococcus plus others.
" 40, Streptococcus plus others.	" 52, Streptococcus.
" 41, Streptococcus.	" 53, Streptococcus plus Bacillus.
" 42, Long fat Bacillus.	" 54, Streptococcus plus Bacillus.
" 43, Streptococcus.	" 55, Streptococcus plus others.
" 44, Streptococcus plus narrow Bacillus.	" 56, Streptococcus.
" 45, No growth.	" 57, No growth.
" 46, Streptococcus.	" 58, Streptococcus.
" 47, Streptococcus plus others.	" 59, Streptococcus plus others.

During the cultivation of the influenza cultures it was observed that the streptococcus always grew very luxuriantly, in broth, in the presence of the staphylococcus. It was also found, on looking up the histories of the cases, that in those with the most pronounced symptoms the streptococcus was found together with the staphylococcus, usually the *Staph. albus*.

Thinking that, perhaps, this association was conducive to the production of favorable conditions for the growth of this streptococcus, a preliminary test was started with serum from the blood of a typical case of influenza, which had proven sterile with all ordinary tests. Three flasks containing 500 c.c. each of plain bouillon were treated as follows:

Into flask No. 1 was planted 5 c.c. of the serum; into flask No. 2 was planted 5 c.c. of the serum, plus a pure culture of *Staph. albus equine*, and into flask No. 3 was planted the culture of *Staph. albus* as a control. After three days' incubation an examination was made, and it was found that flask No. 1 showed no growth; flask No. 2 showed the streptococcus, plus *Staph. albus*, and flask No. 3 the culture of *Staph. albus* pure. The test was repeated with this same serum with always the same results. Evidently the presence of the staphylococcus was essential for the growth of this strain of streptococcus under artificial surroundings. In order to make a thorough test of this striking symbiosis, a series of experiments were undertaken with serum from other typical influenza cases with the following results:

Thirty-three specimens were examined: seven contained the streptococcus in the bouillon alone (flask No. 1); fourteen con-

tained the streptococcus in the bouillon, plus the staphylococcus; nine contained other organisms, as well as the streptococcus, either the staphylococcus or rather large bacillus. Following are the results tabulated:

No.	FLASK 1. Serum.	FLASK 2. Serum + Staph.	FLASK 3. Staph.	Combined Results.
60 ..	—	.. Strep. + Bac. + Staph.	Staph. ..	Strep. + Bac.
61 ..	—	.. Strep. — Staph.	" ..	Strep.
62 ..	—	.. —	" ..	—
63 ..	—	.. —	" ..	—
64 ..	—	.. Strep. + Staph.	" ..	Strep.
65 ..	Staph. + Strep.	.. Strep. + Staph.	" ..	Strep.
66 ..	Bac.	.. Strep. + Staph.	" ..	Bac. + Strep.
67 ..	—	.. —	" ..	—
68 ..	—	.. —	" ..	—
69 ..	Strep.	.. Strep. + Staph.	" ..	Strep.
70 ..	Bac.	.. Bac. + Staph.	" ..	Bac.
71 ..	Bac.	.. Strep. + Staph.	" ..	Bac. + Strep.
72 ..	Strep.	.. Strep. + Staph.	" ..	Strep.
73 ..	—	.. —	" ..	—
74 ..	—	.. —	" ..	—
75 ..	—	.. Strep. + Staph.	" ..	Strep.
76 ..	—	.. —	" ..	—
77 ..	—	.. —	" ..	—
78 ..	—	.. —	" ..	—
79 ..	—	.. —	" ..	—
80 ..	Bac. + Staph.	.. Bac. + Staph.	" ..	Bac. + Staph.
81 ..	—	.. Strep. + Staph.	" ..	Strep.
82 ..	—	.. Strep. + Staph.	" ..	Strep.
83 ..	Bac.	.. Strep.	" ..	Bac.
84 ..	Staph.	.. Strep.	" ..	Staph.
85 ..	Strep.	.. Strep. + Staph.	" ..	Strep.
86 ..	—	.. —	" ..	—
87 ..	—	.. —	" ..	—
88 ..	—	.. —	" ..	—
89 ..	Strep.	.. Strep. + Staph.	" ..	Strep.
90 ..	Bac.	.. Strep. + Bac. + Staph.	" ..	Strep. + Bac.
91 ..	Strep.	.. Strep. + Staph.	" ..	Strep.
92 ..	Strep.	.. Strep. + Staph.	" ..	Strep.

In all cases, except one, the streptococcus could easily be separated from the staphylococcus and grown independently without further difficulty. In this one case it was absolutely impossible to isolate the streptococcus. In all subcultures on solid media the staphylococcus was found pure, while in all subcultures in bouillon the streptococcus was found as well as the staphylococcus. Subcultures from solid media into bouillon gave

the staphylococcus pure. Unfortunately, the culture finally became contaminated with the *Bacillus subtilis* and was destroyed.

Another interesting thing about this organism is the fact that it has passed many times through Berkefeld filters, and a few times through Chamberland filters, showing that it is very minute in some stage of its life-cycle. It is also a very resistant organism; I have cultures growing in the ice box on ascitic agar which were planted February 11, 1911. The media is showing evidence of becoming very dry, but the organisms are still alive. They are also very resistant to heat, having withstood a temperature of 58° C. for two hours.

#### CONCLUSIONS.

A streptococcus, presumably the organism described by Schütz and others, has been cultivated uncontaminated from the trachea in the early stages of nearly every case of acute influenza studied.

An organism with the same characteristics has been isolated from the blood of thirty-four out of sixty-three cases.

Symbiotic relationship with the staphylococcus, in both cultures, seems to favor the growth of this streptococcus.

The *Bacillus equi septicus* has not been seen in, nor isolated from, either the trachea or blood of a single case of influenza; therefore, Lignières' findings have not been corroborated.

The cultural characteristics of the streptococcus in question will not be reviewed at this time, but we will state that, so far, we have not been able to find any point of difference between this organism and the streptococcus isolated from the abscesses in the cases of strangles.

Our inoculation experiments have not been extensive enough to warrant any conclusions as to the infectious nature of the organisms. We have record, however, of one case with the fever, prostration, cough and discharge from the nostrils, which was very characteristic of influenza. This followed the intravenous injection of a pure culture of the organism. We had another case of a large tumor at the site of inoculation after a subcutaneous injection of the same culture.

From the light of our work up to the present time we do not feel justified in stating positively that this streptococcus is the cause of influenza in horses, but we do believe that the findings, combined with those of other investigators, point very strongly to that conclusion, or at least show the close relationship of this disease to strangles and contagious pneumonia.

As to the micro-organisms found predominating in these conditions, the evidence, as given by the literature, is overwhelming in favor of a streptococcus.

In strangles a streptococcus is found by all observers.

The following is a review of the results of the bacteriological investigations in contagious pneumonia:

Siedamgrotsky: Micrococci in lungs and exudates.

Diekerhoff: Streptococci in pleural exudates.

Mendelsohn: Streptococci in pleural exudates.

Peterlein: Chain cocci.

Perroncito: Chain cocci.

Delamotte and Chantemesse: Chain cocci.

Mosselman and Lienaux: Chain cocci.

Schütz: Streptococci.

Moore: Streptococci.

Fieder: Streptococci.

Lignières: Cocco-bacilli and streptococci.

Cadiac: Streptococci.

Rust: Streptococci.

In influenza a streptococcus has been found in the upper respiratory tract by many observers, while the results of these investigations show that a streptococcus has been found pure in the lower respiratory tract and blood in the large majority of cases.

If this streptococcus, which we have isolated from the trachea and blood of influenza, proves to be the same organism that is found in strangles, and also contagious pneumonia, and it is agreed by all authorities that the streptococcus found in strangles is the cause of that disease, then, I believe, I am justified in putting forward the argument that this streptococcus is the cause of the "symptom complex" we have termed *influenza*, and that



strangles and contagious pneumonia are not clinical entities, but complications of influenza due either to secondary infections or to extension of the primary disease.

The cultural characteristics of this organism, as well as some other work we are carrying on along this line, will be taken up in a later study.

---

GOVERNMENT APPROVES TOBACCO DIP FOR SCABIES IN CATTLE.\*—The Secretary of Agriculture has amended Order 143, effective August 15, 1913, relating to dips for scabies in cattle by permitting the use of the tobacco dip prepared from tobacco and suitable tobacco products, provided it contains not less than seven hundredths of 1 per cent. of nicotine. Heretofore, the requirements have been that the tobacco dip should contain not less than five hundredths of 1 per cent. of nicotine and 2 per cent. flowers of sulphur. The tobacco dip of the new strength need not contain the sulphur. The regulation remains unchanged regarding the lime-and-sulphur dip, which may be used as directed in the order.

J. L. GAY SELECTED FOR ARMY REMOUNT COMMITTEE.—The Secretary of Agriculture has announced the selection of Mr. James L. Gay, of Kentucky, to fill the vacancy caused by the lamented death of Mr. Charles I. Railey, on the department's committee of experts appointed to assist in the selection of stallions to be used in the army remount breeding work.

Mr. Gay is appointed as the saddle-horse representative on this committee. He has had a life-long experience in the breeding of American saddle horses, is a judge of wide reputation, and is a director of the American Saddle Horse Breeders' Association. [Office of Information, U. S. Dept. of Agriculture.]

DR. HARRY H. HAVNER MARRIED.—Mr. and Mrs. A. W. Stearns announce the marriage of their daughter, Ruth Adeline, to Mr. Harry H. Havner, on Wednesday, the twentieth of August, nineteen hundred and thirteen, Garden Grove, Iowa. They have the REVIEW's blessing.

---

\* From Office of Information, United States Department of Agriculture.

## AN OUTBREAK OF EPIZOOTIC ABORTION IN CATTLE.

BY VETERINARY SURGEON DESMOND, ADELAIDE, AUSTRALIA.

---

As much attention is being drawn to the subject of epizootic abortion of bovines, the following results of an investigation may be of interest to those studying this subject, and of service to country practitioners.

The outbreak occurred on a large dairy farm in a dairying district where upwards of eighty dairy cows were being milked, the milk supplying a cheese and butter factory. The farmer came to me with the doleful cry, "I am in dreadful trouble. I have lost £100 on my farm during the last few months." He went on to explain that forty cows had slipped their calves; and on further questioning I ascertained that the animals had aborted in all stages of gestation, from a few months to near full term, or, to repeat his own words, "They were from as big as my boot to full size."

I at once came to the conclusion that I would have to treat an outbreak of epizootic abortion, and a subsequent inspection of the cattle and farmyard confirmed this conclusion beyond a doubt.

I first proceeded to examine my client's stock and the surroundings of the farm. It was about an hour after the morning's milking when I arrived, and the cows which had just been milked were to be seen in an adjacent paddock, where green ryegrass was supplied to them morning and evening, this being distributed over the ground in small heaps. The cattle were of the class generally to be seen on dairy farms in that district, and were of various ages and of all sizes. The cows that had aborted were easily picked out in the herd as they showed want of condition, and their hair was rough and lustreless. While walking through the paddock in which the cattle were then grazing, my attention was attracted to several places where the earth had evidently been thrown up, and the farmer confirmed my suspicions by saying

that it had been the custom to bury the aborted fœtuses where they were expelled. I advised him to destroy them by burning.

The dry cattle were next inspected, and the cows especially were found to be in splendid condition. But on entering a paddock in which the young cattle (all heifers) were grazing, I was surprised to see a very poor bull. On closer examination I found him to be in wretched condition, and the brute had scarcely sufficient strength to move about. His hair was very rough, while the tuft of hair at the prepuce was matted and had a dark appearance, which made me suspicious that he had been the means of assisting to spread the disease. The owner informed me that he had paid £3 for this bull, and had had him two years. I instructed him to destroy the animal at once. "That is the only one I have," protested my client, and in reply to my question whether he thought it right to have only one bull to one hundred cows, he said he considered it quite enough, though he had often seen six or seven cows in season around the bull while he was lying down. I informed him that thirty cows to one bull was considered by competent authorities to be a sufficient number.

An inspection of the milking yard disclosed that it was in a deplorable state. It was more than two feet deep with liquid manure, and the corners, which were slightly lower than other portions of the yard were covered with a green scum. The reason assigned for allowing the filth to accumulate in this manner was that the manure was not required, and it was only when the yard became too boggy that all the stuff was removed, and a layer of ferns spread over it. The yard was in a bad situation, and the arrangements were on a primitive plan. It was three chains from the dwelling house and was only three quarters of a chain square, being altogether too small for the number of cattle (eighty) milked there twice a day. The yard sloped towards the bails, which were built under an old shed on one side, and so arranged that each cow after being milked had to go through a small gate at the head of the bail into a race which led into the paddock. This was a very bad arrangement for a dairy-yard, as it must frequently happen that one cow would block the race near the

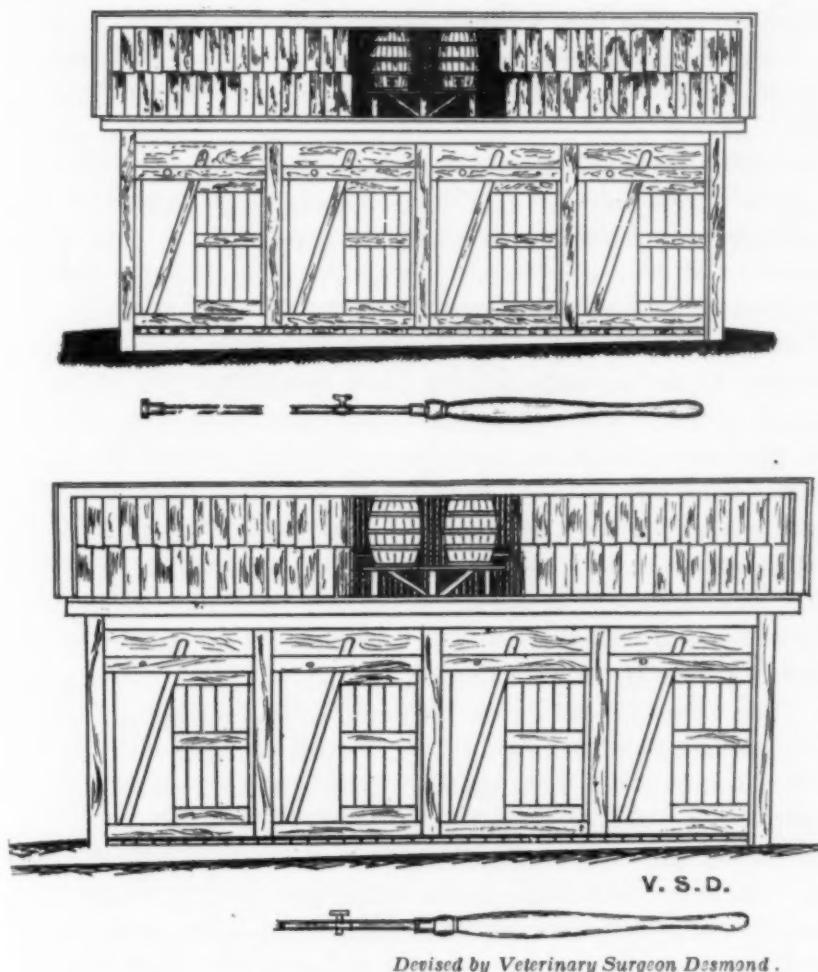
outlet, and so prevent the others from passing. The race, like the other surroundings, was in a frightful state, being one mass of liquid manure. The drainage (save the mark!) was also very defective, and adjacent to the yard, on the low side, there was a small pool of stagnant water which had evidently percolated through the soil from the yard.

I informed my client that it was absolutely necessary for him to remove the yard to a better position. He at first demurred on account of the expense, but consented to effect the improvement when I told him I desired to be paid by results. I suggested that he should request his landlord to pay a portion of the cost of removing the yard, but he seemed to think there was very little prospect of such an appeal being successful. This landlord was a sheep-breeder, and if he could not get a tenant for the farm for dairying, he could stock it with sheep. (If he did so he would probably soon learn to his cost that an outbreak of this kind is as serious in sheep-raising as it is in dairy-farming). I selected a more suitable site on which the new yard was to be erected, and was fortunate in finding at a short distance a stony formation which would afford natural drainage. In accordance with my suggestion the shed to contain the bails was built of new timber, as the old timber could not well be disinfected. The floor of the shed was boarded with strong planks with tar joints, which carried the excreta and disinfecting solution clear of the yard. The gates by which the cattle were let out after being milked were made so as to open directly into the paddock.

I shall now proceed to describe the treatment I determined to put into force: An antiseptic method of treating the outbreak on a plan which I believe is original. For this purpose a high stage was erected in the yard at the rear of the bails, and on this stage two casks, each of thirty gallons capacity were mounted sufficiently high to allow the solution to gravitate with the force required to irrigate the genital organs of the cows—one cask containing a solution for this purpose, while the other was to sluice out the bails and drain. A long pipe with suitable connections

was attached to the cask, and by this means the genital organs of the cows were irrigated with a medicated solution. After the

— *Milking Shed and Apparatus for the Treatment of Epizootic Abortion of Dairy Cows* —



*Devised by Veterinary Surgeon Desmond.*

milking the same pipe was connected with the other cask, which contained a disinfecting solution, and by this means the shed and

bails were disinfected. The following were the ingredients in the solution used for irrigating the genital organs of the cows:

Hydr. perch.....	1 1/4 ounces.
Sodii chlorid.....	3 pounds.
Rain-water .....	30 gallons.

To disinfect the shed and bails I decided to use the following solution alternately, and placed in cask No. 2:

Hydr. perch.....	5 ounces.
Rain-water .....	30 gallons.

and

Ferri sulph. comm.....	3 pounds.
Rain-water .....	30 gallons.

I gave the following directions to my client. To watch all cows in calf, and immediately there were signs of parturition or abortion to have them removed at once to a small paddock. If abortion took place, the foetus and placenta were to be destroyed by fire. If the placenta did not come away naturally in ten or twelve hours, to remove it by mechanical means, and then irrigate the genital organs with two gallons of solution from the No. 1 cask. This treatment to be adopted also with cows that had calved, so as to be on the safe side, and was to be done after all the other cows were milked and turned into pasture. I would have had separate bails and yards for newly-calved cows and also for all new cases of abortion, but I adopted the above plan for the sake of economy.

After the new yards were built and the treatment had been followed for about five days I again visited the farm, and arrived before the morning milking had commenced. An inspection revealed a very altered state of affairs, which tended to show that the farmer had realized the importance of adopting the measures recommended for stamping out the disease. The bails and yard and surroundings were perfectly clean, and there was not the slightest odor from them. I inquired how the treatment had affected the cows, and the reply was, "The amount of matter that came away from the cows was surprising; it was yellow, and in some cases lumps like honeycomb also came away." "What



length of time has elapsed since abortion took place in the cows from which there was so much discharge?" was my next question, and to this my client replied, "At all periods, from a few weeks to many months, but the cows the most discharge came from were those that I could get two feet of pipe into the genital organs."

While on this visit I found all the cows in *oestrus*, which I was informed came on about the third day the solution was used. The farmer also mentioned that on the first and second days he could only pass a foot of the pipe into the genital organs, but on the third day he could pass two feet, and was surprised to see such a mass of matter come away. The fact that all the cows were coming in season was rather an advantage, as the os uteri would be dilated and the uterus could be irrigated.

I have continued the treatment described above and so far the results are highly satisfactory.

One method of spreading the disease came under my notice on the occasion of my last visit. There was a bull near the milking-yard, which, the farmer informed me, belonged to his neighbor, and it had jumped a three-railed fence to get among his cows. I advised him to inform his neighbor of the danger of the disease being carried to his cattle by the agency of the bull, and I believe the animal was at once removed.

In the course of conversation with some professional friends, I was asked, "What would you do if the owner of such a filthy farm as you have described refused to make the improvements?" My reply was that the farmer in this case kept the premises in that state from a mistaken idea of economy rather than from wilful neglect; but in the event of an owner refusing to comply with my instructions I would report the matter to the board of health, and if this did not bring about the desired result then I would inform his landlord and all the persons to whom he supplied the produce. In adopting such measures I would not be exceeding my duties as a veterinarian. If a fatal disease were to break out in that man's family, and the board of health found the premises to be in such an insanitary condition, then I would

be censured, and deservedly so, if it were found that I had previously examined the place and not furnished a report to the authorities.

The outbreak occurred a few years ago, so I have had ample time to note the effects of my treatment. It is hardly needful to say that I have waited anxiously for the results, and that I have much pleasure in reporting that they were most gratifying to the owner of the dairy-farm and to myself. I have kept continuously in touch with the owner, and requested him to call on me when anything of note occurred in the course of the treatment.

To sum up, the treatment had the desired effect. I think I can say this truthfully from a review of the circumstances. If the irrigation had not been resorted to, how would all the discharge that came away after the irrigation was used have been got rid of? Only four cows aborted at next calving, and the owner informs me that he could not irrigate these four satisfactorily, as he could not get all the pipe into the genital organ. Since the outbreak was stamped out, the irrigation apparatus is used to remove the retained after-births in the dairy cattle, and with such successful results that the neighboring farmers often drive their affected cows to this farm for treatment. The owner reports that he has never known it to fail.

---

To be followed by another paper, in which reference will be made to this article.

---

RECOGNITION OF MERIT.—Dr. W. H. Lynch, of Portland, Maine, who was appointed a member of the State Board of Veterinary Examiners of that commonwealth by Governor Haines in March last, has recently been retained as one of the judges for the Central Maine Fair, which holds its Tenth Annual Exhibition at Central Maine Park, September 9th to 12th, 1913, inclusive. We are always pleased to see veterinarians identified with institutions of that kind, as it indicates a broadening of the veterinarian's sphere, and a recognition by the public of his knowledge on matters pertaining to stock raising.

## VACCINATION FOR INFECTIOUS DISEASES.\*

By Dr. R. M. STALEY, HARRISBURG, PA.

---

It seems that the ideal aim of the veterinarian, as well as the "M.D.," is preventive medicine rather than the treatment of preventable diseases after they have manifested themselves. This being the case, the Livestock Sanitary Board of this state has devoted considerable time in the last few years to experiment work, with a view of perfecting our method of diagnosing at an early stage the contagious and infectious diseases with which we deal and the production of dependable vaccines to combat these diseases. Our efforts have been attended with marked success, and it is my desire to bring to the attention of you practicing veterinarians what the Board is doing along this line, as this is of every-day importance to you and of great economic value to your clients.

We are now producing anthrax vaccine, hog cholera serum and vaccine to be used against contagious abortion and a vaccine to be used against hemorrhagic septicemia. We are also distributing blackleg vaccine which is produced by the United States Bureau of Animal Industry.

The object of my paper does not necessitate my going into the production of the above-mentioned materials, as I only desire to explain what this Commonwealth can do, and is willing to do, and how the veterinarians can secure the products that we have for distribution with as little delay as possible between the time the diagnosis is made and the vaccine administered.

Blackleg is a disease that is usually diagnosed without trouble by the local practitioner, and it is seldom that specimens are received at the laboratory from cases where the veterinarian was undecided as to whether or not he was dealing with this disease.

---

\* Presented to the thirtieth annual meeting of the Pennsylvania State Veterinary Medical Association at Harrisburg, January, 1913. Reprinted from the published proceedings.

As soon as a veterinarian satisfies himself that he is dealing with an outbreak of blackleg he should telegraph to the Board, stating that he has made a diagnosis of blackleg on a given premise and that he desires vaccine for a given number of cattle; it being remembered that the only animals that it is necessary to vaccinate against blackleg are those between six months and two years of age. The requested vaccine, together with a circular giving full instructions for the preparation and administration of the material, will be forwarded at once, together with a blank upon which we require a report made as to the use of the vaccine supplied, also a letter of authorization and voucher. The veterinarian will be compensated for services rendered and expenses incurred in the administration of the serum, but we cannot pay him for a first visit to the premises at which time the positive diagnosis was established.

Should it be that a stock owner requests a veterinarian to vaccinate some new stock that he desires to introduce upon premises where blackleg is known to have existed, this Board will be glad to furnish vaccine for such vaccinations free of cost, requiring only that a report of the use of the vaccine be submitted to this Board upon a blank supplied, but we, under these circumstances, cannot compensate the veterinarian for the administration of the vaccine.

In addition to the above work against blackleg this Board holds, early each spring, a vaccination against this disease at the expense of the Commonwealth. The fact that this vaccination is to be carried out is published in the leading newspapers in the counties in which our records show blackleg has existed. It is only required that stock owners communicate with this Board in writing, requesting the vaccination of their stock against blackleg and stating the number of animals to be vaccinated. Their full name and address is also required. When the time for receiving applications, as stated in our advertisement, has elapsed, the work is assigned to local veterinarians, and we try to give all the cases in the immediate vicinity of a given veterinarian to that man in order to save time and traveling expenses.

Our work against anthrax is carried out practically the same as is our work against blackleg, except that instead of advertising our annual spring vaccination against anthrax in the newspapers we communicate by letter with every man who in the two years last passed has had anthrax upon his premises or has had his animals vaccinated at the time of our annual spring vaccination.

In combating anthrax we vaccinate twice, as it has been found that to administer vaccine of sufficient virulence to overcome the strain of infection prevalent in this state, at one vaccination, would kill susceptible animals and produce such severe conditional disturbances in the majority of other stock that they would be rendered practically valueless as dairy animals. Even though we are at this time administering a very weak vaccine first, followed in about twelve days with a second and stronger vaccine, we find that there are some few highly susceptible animals that cannot stand even this graduated dose of vaccine, and the reaction following the administration of the second vaccine is sometimes attended with the partial or complete stoppage in the production of milk and the animal loses flesh rapidly. Some of these cases recover quickly, while others never regain their former condition.

The percentage of animals that show a reaction following the administration of our anthrax vaccine is so extremely small that it, of course, is not seriously taken into consideration in our vaccinations against anthrax and serves to indicate that our vaccine is sufficiently strong to be of benefit to the great number of cattle kept on premises heavily infested with anthrax.

For years many of the losses sustained in herds in certain sections of the state have been attributed to what we have termed "so-called hemorrhagic septicemia." This manner of designating this disease was used because the disease, presenting all the clinical symptoms of hemorrhagic septicemia, was considered by many to be this disease, but has never been diagnosed at the laboratory from specimens procured from numerous outbreaks. During 1912 it was demonstrated positively at our laboratory



that these cases were actually cases of hemorrhagic septicemia, and it was also determined that the different strain of infection differed vastly in virulence. It, therefore, was extremely hard to prepare suitable vaccine with which to combat this disease, but we feel that in the very near future we will have prepared a vaccine that will be of sufficient potency to be used successfully in the vaccination of stock by the simultaneous inoculation method, provided, of course, the outbreaks met with in the future are not due to a bacillus with any greater virulence than the most virulent with which we have to date had to deal. It must be understood that this work is to a large degree only in the experimental stage, but that we are willing to render you and your clients any assistance that we properly can, giving you the assurance that no harm will be done the stock treated and, in all probability, the mortality greatly reduced. Therefore, if you, in your practice, meet with any cases that exhibit the recognized clinical symptoms of hemorrhagic septicemia we would be pleased to have you report this matter at once by wire, and we will endeavor to assist in the establishing of a positive diagnosis and if possible vaccinate the clinically affected animals, as well as the exposed animals, free of cost to the stock owners.

Contagious abortion is one of the greatest scourges of the dairy industry and the degree to which it is prevalent in this Commonwealth is best realized by the man who is practicing in a well-developed dairy section. If a vaccine can be prepared and used with uniform success against this disease it will certainly be a great boon to the veterinary profession and the dairy industry.

To date, our results from the administration of vaccines against contagious abortion, with a majority of the strains of bacilli used, have not been very encouraging. When the animals are inoculated subcutaneously, the production of immune bodies has been extremely slow. However, we are at this time conducting experiments on heifers with living material by intravenous injections, but the experiment is not completed, and no conclusive deductions can at this time be made.



We, at this time, are willing to submit to examinations all specimens forwarded to the laboratory from suspected cases of contagious abortion. For such laboratory examinations the foetus, foetal membranes or afterbirth should be collected and sent promptly to the laboratory. Such specimens should be well wrapped in cloth saturated with a bichloride of mercury solution 1-1000. This should then be packed in a box or bucket and surrounded with saw dust. In warm weather cracked ice should be mixed with the saw dust, but this precaution is not necessary in cold weather. The box can be shipped C. O. D. to the laboratory, State Livestock Sanitary Board, Thirty-ninth street and Woodland avenue, Philadelphia. Mark the box with name and address of sender and also "Perishable! Rush!"

If a positive diagnosis is established at the laboratory, blood specimens from the entire herd will be procured and by means of the complement fixation test all members of the herd having infection in their systems, whether they have ever aborted or not, will be pointed out, proper sanitary precautions advised and steps immediately taken to prepare and administer a vaccine against this particular strain of infection. This work, including the establishment of a positive diagnosis at our laboratory, will be carried out free of cost to the stock owner.

Though a great number of hogs are fed in this state we, of course, do not compare with the corn-producing states in as far as the number of our hogs is concerned. However, we certainly have a fair proportion of cases of hog cholera. Pennsylvania does not produce a very large percentage of hogs that are fattened and slaughtered in this state, and it has been found that the greater proportion of these animals are shipped to us from neighboring states, Ohio, Virginia and West Virginia supplying the most of the imported hogs, and while we, of course, cannot attribute all our outbreaks of hog cholera to shipped hogs, it is very frequently possible to trace the source of infection to a shipment of hogs, to a stock yard where interstate hogs are handled, or to a feeding pen where interstate hogs have been unloaded to be fed in accordance with the Federal law *re* feeding and watering. Any dead hogs found in or near railroad hog

pens should be treated with suspicion and the carcasses disposed of either by cremation or deep burial and the railroad company notified to clean and disinfect their pens. This action they will gladly take as a proper safeguard to their patrons.

As you men know, this Board is producing hog cholera serum with which we are endeavoring to combat this disease, but until there is effectual co-operation between the Federal government and the various state governments we cannot hope to eradicate hog cholera from Pennsylvania, nor to entirely prevent the great losses sustained annually on account of this disease. However, money spent in producing and administering hog cholera serum is money well spent, as we are now saving annually to stock owners in this Commonwealth many times the amount of money expended in this work.

If a diagnosis positive of hog cholera is established either by means of clinical symptoms and post mortems held or by means of specimens forwarded to our laboratory, kindly advise this Board at the earliest moment possible as to the approximate aggregate weight of all hogs and pigs that are to be vaccinated. Immediately upon receipt of such information we will forward to a qualified veterinarian sufficient hog cholera serum to vaccinate the exposed animals, will ask him to place the animals under quarantine and advise the owner as to isolation, disinfection, etc. This work will be carried out at the expense of the Commonwealth, but, as in connection with all of our work, we cannot compensate the veterinarian for the visit made to the premises at the request of the stock owner.

We do not feel that hog cholera serum can be considered a curative agent, and we desire that the material only be used as a prophylactic. Therefore, no animals showing clinical symptoms of hog cholera should be vaccinated. These animals should be destroyed and properly disposed of either by cremation or deep burial under a coating of lime if the owner will give his consent. However, it must be fully understood that this Board cannot compensate persons for losses sustained on account of hog cholera.

At this time we are employing only the serum treatment alone in our efforts to control hog cholera, but in the future it is probable that we will take up, to a limited extent, the work of vaccinating hogs against hog cholera by the simultaneous inoculation method. On account of the grave dangers surrounding this method, in the hands of inexperienced and not overly careful men, it is not probable that this method will be used, except by regular agents of this Board who have received special instructions *re* the work.

We find that thorough disinfection with a three to five per cent. lysol solution, followed by the liberal distribution of lime, is the best method of disinfecting against hog cholera and that no injection should ever be made until the seat of injection has been very thoroughly cleansed with at least a three per cent. solution of lysol and all dirt and scruff entirely removed. If particular attention is paid to this small detail, the number of abscesses following vaccinations will be materially reduced.

This Board has tried every conceivable plan to secure from stock owners accurate data as to the results of the vaccinations carried out upon their premises, and in July of 1912 we adopted a necessarily long report blank and have been getting better results from the use of this set of report blanks, but find that these results are far from what we could reasonably expect. We have no complaint to make about the veterinarians filling out their portion of the report blanks, but we experience no end of trouble in procuring from stock owners the portion of form 103 that you men leave in their hands to be filled out, signed and returned to our office about thirty days from the date of vaccination. We, therefore, would greatly appreciate your co-operation on this point and trust that you will impress upon your clients the great importance of forwarding a record of the results of all vaccinations to our office.

---

MARRIED.—Dr. Lyle A. Brown, Milford, Iowa, was married on August 5, 1913, to Miss Magdalin Moritz of that place. Hearty congratulations are extended to the happy couple.

## ANTHRAX.\*

BY DR. R. C. REED, NEWARK, DEL.

---

This history of this widespread disease known as anthrax is as interesting reading as the most fascinating fiction of to-day, and undoubtedly much of its ancient history is quite as fictitious. However, underlying the statements of Moses, Homer, Plutarch, Pliny and others regarding it, is a groundwork based on fact that gives us a more or less accurate idea of the horror of the scourge. When there was no known method of controlling infectious diseases it was looked upon as a visible manifestation of the wrath of the gods visited upon the people for their misdeeds, and nothing could be done to mitigate the suffering. As we look back upon those epidemics more or less picturesquely portrayed by the early writers we may well be thankful that we are living in the twentieth century.

It was not until the middle of the twentieth century that the scientific study of anthrax commenced; and it is important, from a historical standpoint, to note, in passing, that the bacterium of anthrax was the first bacterium demonstrated to be the cause of an infectious disease of animals. In 1849 Pollender, while studying the blood of a cow dead of anthrax, observed numerous rod-shaped microorganisms which he believed bore some etiological relationship to the disease. However, Pollender's theory was not supported until Davaine in 1863 observed the same organism under similar conditions, and he, in turn, announced his belief that it was the cause of the disease. This theory persisted, although questioned, until 1876, when Koch announced that he had isolated *Bacterium anthracis* in pure culture, had reproduced the disease in susceptible animals and again recovered the organ-

---

\* Presented to the thirtieth annual meeting of the Pennsylvania State Veterinary Medical Association at Harrisburg, January, 1913. Reprinted from published proceedings.

ism from the induced cases. This fixed beyond all question the relationship between the organism and the disease.

With modern laboratory methods anthrax is, relatively speaking, an easy disease to diagnose. The comparatively large size of the organism, its definite morphological characters, and the readiness with which it grows on the ordinary culture media in a characteristic manner, makes it not a difficult one to recognize. The rods are square ended, inclined to form chains, under certain conditions to produce spores, and when found in the blood or tissues of animals are surrounded by a capsule.

There are three principal channels of infection: First, by ingestion of the infective material at pasture, or more rarely by hay that has been flooded from an infected stream. Second, by inoculation through wounds, abrasions or the bites of insects, and third, the spores may be inhaled with the dust. Of course, this can only take place in an infected area, and fortunately these areas are more or less limited.

Clinically, we must differentiate between anthrax and some of the non-specific diseases. Moore says, "the suddenness of the attack, and in very virulent cases the short duration of the disease, may tend to the mistaking of it for poisoning, cerebral apoplexy, pulmonary congestion, heat apoplexy, death from lightning, or acute gastro-intestinal inflammation." However, a bacteriological examination would clear up these cases. Among the specific diseases which are sometimes mistaken for anthrax we might mention symptomatic anthrax or blackleg, malignant edema, septicemia hemorrhagica and rabies. In the case of blackleg the swellings differ from those of anthrax, in that there is gas production, which is easily recognized by the crackling sound produced by passing the hand over the skin, which covers the swollen area. The tumors of malignant edema likewise crepitate, making it easy to recognize the difference between it and the anthrax edema. With septicemia hemorrhagica and rabies, the differential diagnosis can only be positively made by bacteriological methods where the anatomical changes are not very distinct.



If suspected material has to be shipped to the laboratory from a distance or if putrefactive changes have taken place, the matter of diagnosis may be complicated somewhat. The putrefactive organisms which resemble the anthrax bacterium more or less closely can usually be distinguished from it by careful examination, although it may become necessary to resort to cultures to be positive in some cases. Here these two organisms may be readily distinguished from each other by the fact that the putrefactive organism is an obligate anaerobe, while *Bacterium anthracis* grows readily in the presence of air. Usually this will be sufficient to make the diagnosis absolutely positive; but recently several investigators have found organisms in blood, tissues and even in soil and water that cannot readily be distinguished from the anthrax bacterium either morphologically or by its cultural characters. The only marked difference seems to be in its lack of pathogenic properties and in some cases the presence of motility—*Bacterium anthracis* being non-motile. Fitch has isolated and studied such an organism from the blood and spleen of a horse which had died of suspected anthrax. Morphologically and culturally this organism very closely resembled anthrax, but was not pathogenic to rabbits and guinea pigs, and after a few generations on artificial media it showed constant motility. In a paper published in 1911 Fitch has brought together the descriptions of no less than twenty other organisms which very closely resemble the anthrax bacterium, except that they are non-pathogenic or pathogenic to mice only. One was isolated from sick bees and was pathogenic for bees only. A careful study of parallel cultures of these organisms might prove that several of them are identical, which would eliminate some of the possibilities of error in early diagnosis.

In few, if any, other diseases is early diagnosis of greater importance than in anthrax. The suddenness of the attack, the short duration of the disease in the fulminating type, together with the large proportion of the exposed animals which may become affected, make an early and accurate diagnosis of the greatest importance. Too often a case or two occurs in a locality and



because the animal is found dead without having shown any visible signs of being sick, it is put down as a case of poisoning. The carcass is buried in a shallow grave or is left on top of the ground for dogs and buzzards to dispose of, and a fresh focus of disease becomes a center from which foci are established over a very considerable area by the carrying of the infective material by the above-mentioned scavengers. Thus a single neglected case may be the origin of several new "anthrax farms."

When once established anthrax is a most difficult infection to uproot. The spores possessing great vitality will remain viable and virulent for many years, while the "normal destructive agencies of nature have little effect on them."

Practically all species of animals and man are susceptible. In the order of susceptibility among domestic animals to natural infection, cattle and sheep probably stand first, while horses and mules take second place and swine are third. Some authors have stated that pigs are practically immune, but this claim cannot be substantiated, since there are many cases of infection in swine on record. However, they do appear to possess a considerable amount of resistance to the disease.

The symptoms vary widely in different species of animals and in different individuals. One of the most characteristic symptoms is the suddenness of the attack with high elevation of temperature, local manifestations in the form of edema, digestive disturbances, sometimes shown in the form of colics, difficult respiration and brain complications.

Anthrax without localization is characterized as peracute or fulminating, acute and subacute. An animal with the peracute form presents symptoms of cerebral apoplexy, becomes suddenly ill, staggers for a brief period and then falls. Death may or may not take place during convulsions. In this form the animal lives only from a few minutes to an hour or two after the first symptoms are observed. Cattle and sheep most frequently succumb to this form of the disease.

In the acute form the course of the disease is somewhat slower and may last twenty-four to thirty-six hours. The brain may

be congested, the temperature reach  $106^{\circ}$  to  $108^{\circ}$  F.; the animal becomes restless, may rear, runs to and fro, goes into convulsions and probably dies during coma. In both these forms hemorrhages are noticeable on the mucous membranes and bloody discharges from the mouth, nose, anus and vulva are characteristic of the disease.

The subacute form, or "anthrax fever" as it is sometimes called, may run a course varying from two or three days to about a week. In this form the symptoms are more marked and easier to diagnose. The symptoms are essentially the same as in the acute and peracute forms, except the longer duration. In epizootics this form usually appears in the later cases.

This disease with marked visible localized lesions is more apt to appear in horses and may run a much longer course, lasting from four or five days to two weeks or more. It is also much less liable to terminate fatally than the other forms. However, horses are usually affected with the acute or subacute form, and the first symptom is a marked rise in temperature with rapid pulse. There may be chills, more or less profuse lachrymation, dullness, staggering gait, or there may be convulsions showing cerebral congestion. Colic is a noticeable symptom in the horse. The swellings may occur over any part of the body, but more frequently on the under side and on the inner sides of the legs. The bloody discharges from the natural openings of the body are common in all forms of the disease.

Post-mortem examinations are not conclusive, unless the specific organism is found in the blood or tissues. All microscopic lesions may be absent.

Medical treatment has not proven to be a success, and attendants are liable to contract the disease. Prevention is of the chief importance. The most widely used and most effective method of preventive inoculation is that of Pasteur. In Germany and England vaccination is looked upon with some suspicion owing to uncertainties in strength and action of these products. They consider what is known as the stamping out system far superior and the only reliable measure for suppressing the disease. Rigid

laws have been passed in England relating to the control of anthrax.

To be effective, vaccination should be practiced about a month before the animals are to be turned out on anthrax-infected pastures. Otherwise the danger of infection during the period of anaphylaxis will be increased, and the good results of vaccination will be more than neutralized. Successful results of vaccination cannot be denied, neither can it be denied that there have been failures. Some of these failures to obtain good results can be easily explained on the ground of improperly prepared vaccines, or by the fact that the animal was already infected when the vaccine was applied. In other cases no satisfactory explanation of the failure to protect has been offered. It must be admitted that there are many things about the virulence of organisms and the susceptibility and resistance of the animal body to infective material which we do not understand.

During an outbreak of anthrax the method proposed first by Sobernheim in 1899 seems to be effective. It has been tried in Germany, South America and in this and other countries with good results. The method consists in the injection of the serum of a highly immunized animal either with or without a small quantity of anthrax bacteria.

Just a word about the disposal of the carcasses of animals dead of the disease. Completely burn them if such a procedure is possible. If not, bury them deeply, completely surrounding the body with plenty of quicklime. Additional precautions in the way of plugging all natural openings of the body with cotton saturated with a strong disinfectant have been practiced. The grave should be fenced in, and the surface of the ground burned over each year to kill any spores that may be brought to the surface.

---

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION will hold its semi-annual meeting at Reed House, Erie, September 16, 1913. Veterinarians from all States are welcome.

## THE ARTIFICIAL INOCULATION OF CATTLE WITH THE BACILLUS OF CONTAGIOUS ABORTION.<sup>1</sup>

BY FRANK M. SURFACE, MAINE AGRICULTURAL EXPERIMENT STATION.

In a recent address<sup>2</sup> Professor Williams, of Cornell University, made the following statements regarding contagious abortion of cattle (pp. 119-120):

"Experimenter after experimenter has asserted that he had induced abortion by the vaginal introduction of the organism after the uterine seal had been formed, by injecting the organism beneath the skin or into the jugular vein or by feeding the infection by the mouth. No question is raised regarding the facts. They have thus inoculated the animals with the Bang organism, the animals have largely aborted, the Bang organism has been recovered from the uterus, etc.

"On the other hand, no adequate controls, so far as we have found recorded, were kept to check the experiments. It has not been shown that a like number and kind of pregnant cattle would not have aborted had sterile salt solution been substituted for the Bang organism. The recognition of the Bang organism in the uterus after abortion following experimental inoculation, does not show that the one in the uterus is the lineal descendant of the other, nor does it at all prove that the Bang organism was not already in the uterus when the animal was inoculated."

The chief contention of Dr. Williams is that the abortion organism cannot pass from the blood of the mother into the closed uterine cavity. Thus he says (p. 117):

"The Bang organism is almost as *large as the bacterium of tuberculosis*<sup>3</sup> and other organisms which fail to pass through the undamaged placental filter, and no destructive placental lesions have yet been noted. So far as we are aware microscopically visible bacteria do not pass the intact placental filter."

Dr. Williams' statement regarding the size of the Bang organism is, I believe, at variance with the results of previous investigators. Thus Bang, MacFadyean and Stockman, Holth, Zwick and others have insisted upon the small size of this bacillus. Holth, who has probably had as much experience as any other person with this organism, says that the abortion bacillus is one of the smallest known kinds of bacteria.<sup>4</sup>

However this may be, it is probable that the chief reason why ordinary bacteria are not found in the uterine cavity is not due to their large size and consequent inability to pass through the capillary walls separating the maternal and foetal blood. It is much more probable that the natural resistance and bactericidal properties of the body fluids prevent most organisms from reaching this remote portion of the circulatory system.

Recent investigations<sup>5</sup> have shown conclusively that the abortion bacillus occurs in the milk of infected cows. It is certainly very probable that the abortion bacillus enters the mammary gland *through the walls* of the blood vessels rather than through the milk tubes.

Further, I believe that I am able to offer reasonably conclusive proof that the subcutaneous inoculation of a culture of the abortion bacillus *may* produce abortion. The facts have already been published<sup>6</sup> in another connection and will be repeated here only in so far as they bear upon this subject.

For experimental purposes we have on hand a number of distinct cultures of the abortion bacillus. These cultures show a number of individual peculiarities, but without exception they all displayed the usual peculiarity toward oxygen when first isolated. In no case, except the one mentioned below, have we ever been able to grow this organism in the air, direct from aborted material. However, in the majority of cases it has been possible to accustom these strains to grow on plain broth agar in the free air.

In 1911 I brought to this country three cultures of this organism which had been kindly given me by Professors Jensen and Holth in Copenhagen, Denmark. These cultures had been



accustomed to aërobic conditions for a long time before I received them. Since 1911 they have been frequently transferred, always growing readily in the air. They always show a good growth on plain broth agar on the second day after inoculation.

For another purpose I inoculated a healthy pregnant cow with a small quantity of washed agar cultures of these Danish strains.

The history of this cow is as follows: She was a grade Jersey, purchased in July, 1912, for experimental purposes. According to her previous owner she had never aborted and came from a farm where there had been no abortion. She was bred on June 10, 1912, nearly a month before coming to the Experiment Station. The uterus should have been closed by this time.

During the summer and autumn her blood was tested at frequent intervals for abortion anti-bodies by both the agglutination and complement fixation tests. At no time could abortion anti-bodies be demonstrated in her blood except as noted below.

On November 25, 1912, she received, subcutaneously, 20 c.c. of a dilute suspension of these Danish cultures. This suspension showed a count of approximately 500,000 bacteria to the cubic centimeter. Fourteen days after the injection her blood showed traces of abortion anti-bodies. Twenty-five days after the injection she gave a very strong reaction. Her blood has continued to show the presence of abortion anti-bodies up to the present time (May 30, 1913).

On January 10, 1913, she showed signs of aborting, and on January 16, 1913, she aborted a well-developed calf. This abortion occurred 52 days after the inoculation. There was a large amount of the typical abortion exudate surrounding the cotyledons.

A few hours after the abortion the afterbirth was removed by a veterinarian. Plain agar plates were inoculated with material from the afterbirth and from the foetal stomach. After 24 hours at 37° C. these plates showed no growth except a few contaminating colonies from the cotyledons. About half the plates were then placed in a Novy jar with *B. subtilis* after the



method of Nowac. On the second day it was noted that the plates remaining in the air developed a fine opalescent, dew drop growth characteristic of the Bang bacillus. This growth increased within the next day or two until a very rich growth, and in the majority of plates a pure culture appeared. By microscopical examination, and also by using it as antigen in a complement fixation test with an immune serum this growth proved to be the *B. abortus*. The plates in the Novy jar also showed a rich growth of the same organism, but this growth was in no respect better than that obtained in the free air.

It is certainly very unusual to obtain the abortion bacillus growing so readily in the free air in the first generation. It is further to be remembered that this growth appeared on plain broth agar without any serum and that it appeared on the second day of incubation. In these respects this culture resembled very closely the strain of organisms injected 52 days before. In all the recorded cases of the abortion bacillus growing in the air in the first generation this has occurred only on serum agar and after a period of from four to ten days incubation.

In this connection a statement made by Fabyan<sup>7</sup> regarding this organism is of interest. He says (p. 476), "It is an interesting fact that after the organism has adapted itself to ordinary aërobic conditions it does not lose this characteristic by further passage through guinea-pigs. Some of our guinea-pigs so inoculated have lived fifteen to twenty weeks, and yet upon making cultures from the spleen *B. abortus* developed even at room temperature."

In my mind there is little doubt but that the organisms recovered from this cow were the "lineal descendants" of those which I injected subcutaneously in the fifth month of pregnancy. I believe that this is a reasonably well substantiated case of a cow infected artificially with this organism "after the formation of the uterine seal." If this is true it is not unreasonable to suppose that the same may occur under natural conditions.

The writer realizes that these results should be verified by further experiments. However, if it is shown that abortions

can be caused, even in the majority of cases, by using such aërobic cultures this offers a new technique which will be of great value in the further study of this disease. Thus by such means it would be possible to ascertain whether cows can be infected through the alimentary canal. It would further be possible to study more accurately the effect of vaccines and other alleged remedies for this disease. The first thing, however, is to ascertain what percentage of cows, which from their history and blood tests appear to be healthy, can be infected by such aërobic cultures. It is hoped that this suggestion will be tested by a number of investigators.

#### SUMMARY.

The subcutaneous injection of a pregnant cow with a mixture of aërobic cultures of the abortion bacillus was followed by a typical abortion 52 days later. From this afterbirth and foetus a strain of organisms was isolated which grew steadily in the air on plain agar on the second day of incubation. In these respects the isolated organisms agreed with the strains injected and differed from any strains previously isolated. This in connection with Fabyan's evidence from guinea-pigs indicates that a cow may be artificially infected by the subcutaneous inoculation of this organism.

If further experiments should substantiate this view, the use of aërobic cultures will offer a valuable method in the further study of this disease.

#### REFERENCES.

- (1) From the Biological Laboratory of the Kentucky Experiment Station, Lexington, Kentucky.
- (2) Williams, W. L., Contagious Abortion. 16th Ann. Rpt., U. S. Live Stock Sanitary Association, Chicago, pp. 111-126, Dec., 1912.
- (3) *Italics mine.* F. M. S.
- (4) "Die Abortusbazillus gehört zu dem kleinsten bekanten Bakterienformen." Zeit. f. Infektkr., u.s.w. Bd. 10, 1911.
- (5) Smith and Fabyan—Centralbl. f. Bakt. 1 Abt. Orig. Bd. 61, pp. 549-555, 1912. Melvin—The Vet. Journal, 1912, p. 526.  
Zwick u. Krage—Berl. Tierärztl. Woch., Bd. 29, pp. 41-43, 1913.
- (6) Surface, F. M.—Journ. of Infec. Diseases, Vol. XII., pp. 359-363, 1913.
- (7) Fabyan, M.—Jour. Med. Res., Vol. 26, pp. 441-488, 1912.

MONTANA VETERINARY MEDICAL ASSOCIATION will hold its next meeting at Helena, September 24 and 25, 1913.

## HOCK JOINT LAMENESS.\*

BY JAMES McDONOUGH, D.V.S., MONTCLAIR, N. J.

*Introduction*—There probably is no condition that we are called upon to diagnose or treat with which we are more familiar than hock joint lameness. And what your Committee expects me to say that will be instructive, or even interesting, is beyond my power of comprehension. However, out of respect to them, I shall try your patience by mentioning a few things about hock joint lameness and its cause, that may prove sufficiently amusing to serve as an excuse for the few, if any, who may remain in the room.

*Percentage of Lameness in Hock*—Barring accidents, probably the cause of 75 per cent. of all lameness of the hind limbs exist in the hock joint, as shown by the report of a committee appointed by the New Jersey Veterinary Medical Association to examine the limbs of a number of horses. They report that of 106 horses examined, 103 showed lesions on the inside of the hock joint of one or both limbs, that were likely to cause lameness. And our experience in practice bears them out in their statement, for while we have reason of our own for not applying treatment to the hock joint in so great a percentage of the lame animals we treat, yet I think a careful and impartial analysis of the results will prove this committee's report to be correct.

*Cause*—Injuries to the hock joint so frequently occur, it becomes evident that either the conformation of the joint is deficient or its work has been abnormally increased.

Not having attained that degree of efficiency which will permit of our criticizing the work of Nature, and in view of the fact that we have, and continue to, disturb the adjustment of the entire limb to that extent that it is impossible for the hock joint

\* Presented at the Fiftieth Anniversary Meeting of the American Veterinary Medical Association at New York, September, 1913.

to perform its work without injury, we must shamefully accept the responsibility.

That the hock joint may perform its work with comfort it is absolutely essential that the limb be kept in its normal position. Every care should be exercised to prevent its displacement in a direction not included in the motion natural to the joints. The hock joint will not permit of motion to either side, and the broad quarters of the hoof are intended to prevent its displacement in that direction, and will prevent it if they are allowed to rest upon the ground; but when we apply a shoe that offers not the slightest support to the foot on either side, how can we expect the limb to perform work and escape injury?

Any form of shoe we apply robs the limb of a portion of its natural support. A pad seven-eighths of an inch thick deprives it of approximately 15 per cent. of the support furnished by the unshod hoof—by increasing the length of the hoof and not the width. If this increase in length were caused by its growth, the oblique direction of the wall would increase the width proportionately, and the relation between power and resistance would remain undisturbed. When a three-calked shoe, the ordinary heel and toe shoe, is used the support at the sides corresponds to the length of the toe in front and the distance between the outside of the heels behind—approximately 55 per cent. of its natural support. There is no one who will claim that the web of the shoe can offer support to that part of the foot outside of its point of contact with the ground. Then why wonder at the results? The joint could not continue to perform its work under such conditions without injury if it were made of tempered steel.

Your time here is too limited to allow a further consideration of this subject at this time, but I ask that you take it up in your practice as I know it will result in your discontinuing and discouraging the use of any form of shoe that does not provide the sides of the limb with support equal to the width of the quarters resting upon the shoe, and that will be from ten to fifteen per cent. less than Nature considered necessary for its comfort.

For the crippled conditions of our horses of to-day compel

us to admit that their limbs are unequal to the task of performing their work under present conditions that tax them beyond their power of endurance. We, as veterinarians, are in duty bound to make a thorough investigation of the cause, and do everything within our power to correct it. If these injuries result from conditions over which we have control and can remove, we are traitors to our profession if we allow them to continue. What greater act is it possible for the veterinarians of the United States to perform than that of relieving the suffering that those dumb animals have been compelled to endure in silence? In what better way can we fulfill our obligations to the public than to add 100 per cent. of the value of their horses by doubling their period of usefulness.

*Diagnosis*—When we see a lame horse and suspect a spavin as the cause, we invariably look at, and feel of the inside of the hock, but how that can assist us in making a diagnosis is hard to understand, as the presence of a large spavin or the absence of a small one, does not furnish the slightest proof that the cause does or does not exist there, for many horses go sound with very large spavins, while many others go lame from the same cause long before the presence of a spavin can be detected by the sense of touch or sight. So I think it better that we depend upon the history of the case, together with the shape of the hoof and the position of the ankle.

The history will be of special importance in the presence of an increased growth of the heels, as a punctured wound of the foot in the region of the heels, sprained tendons, or any condition of the foot or limb that will cause the animal to throw his weight in the direction of the toe, will cause the heels to grow high. But any of these conditions are likely to cause lameness immediately, and their presence to be detected before a change will take place in the growth of the heels. Spavin is the most likely condition that I know of to bring about such a change in the shape of the hoof and not cause lameness.

We must not lose sight of the fact that a horse showing all of the symptoms of hock joint lameness might pick up a nail or



injure some part of the limb below the hock. So a careful examination of that part of the limb should always be made.

I think the ankle joint is a more trustworthy symptom, for unless caused by a sudden strain, 99 per cent. of all cases of spavin lameness will be preceded by some degree of knuckling, and 100 per cent. will show knuckling when lameness is present. I know of no other condition that the horse is heir to that will cause knuckling of the hind limbs that its presence cannot be detected.

Knuckling of the ankle, in the absence of any perceptible condition that will cause it, is accepted by me as reasonable proof that the cause exists in the hock, and upon that symptom alone I have applied treatment to that part of the limb and often with very satisfactory results. It surely can be relied upon to the extent of excluding from our examination all of that part of the limb above the hock.

*Treatment*—I have nothing new to offer in the way of treatment. I always try to lessen the work of the part by placing the limb in its normal position, and by applying a shoe that will keep it there.

When I say lessen the work, I do not refer to the work of overcoming the resistance at the toe; I mean the abnormal work caused by the limb having been forced out of the line of its long axis, in the direction of the side. I have never felt that I got good results from raising the heel and shortening the toe, but find that much relief is given the animal by correcting the abnormal position of the foot and providing it with sufficient support at the sides, and many cases of hock joint lameness will make a good recovery without further treatment, and remain sound while the limb is kept in that position, to again go lame when a three-calked shoe is applied.

I will now conclude by expressing my appreciation of the great honor your Committee has conferred upon me by selecting me as one deserving of the privilege of addressing this meeting. And I apologize for my failure to provide something more deserving of your presence.



I thank you for your attention and I hope you will take some action at this meeting that will result in correcting this great and long-existing evil. Fifty years is long enough for us to witness the sufferings of these animals and not offer them any assistance. We have even encouraged a continuance of this practice and collected our fee for treating its unavoidable results. And I know of no act we can perform more appropriate to this occasion than to restore to the limbs of these animals the support so essential to their comfort in the performance of their work.

---

DR. T. W. WATSON, president of the State Board of Veterinary Medical Examiners of Texas, has changed his residence from Austin to Corsicana of that state. The Board met in Houston on June 18.

DR. BISHOP OF IOWA GOES WEST FOR HEALTH.—Dr. Geo. D. Bishop, formerly of Humeston, Iowa, has located at Burley, Idaho, where the doctor, while building up his health, will incidentally build up a practice. The REVIEW wishes him success in both.

CHIEF MILK INSPECTOR.—Dr. John F. Miller, of Albany, N. Y., has recently been appointed Chief Milk Inspector of that city, in the Bureau of Health, Department of Public Safety. We congratulate the doctor on his appointment to so important and responsible a position in the State Capital.

INTEREST KEEN IN TROTting HORSES.—At the recent trotting meet at old Goshen, the last week in August, ten thousand spectators witnessed some of the best racing ever held at that famous old New York track. "Uhlán," who made his world's record of 2.02¾ on that track, started to lower his record there at this meet, and started so well that he made the first quarter 30¾ seconds, and the half in 59¾, and the crowd nearly went mad with delight, but just as he started on the second lap, he stepped on his quarter boot; but still he recovered quickly and finished his mile in 2.03¾. He did not lower his record because of the accident, but he proved himself a grand race horse, and won great applause from the spectators. Horses like that are striking examples of what can be accomplished by careful, scientific breeding.

## THE FUTURE OF THE PROFESSION.\*

BY DR. A. H. BAKER, CHICAGO, ILL.

In these days of motor cars and trucks the future of the profession becomes a live question. The question is often asked us, "Do you have anything to do in these days of the auto? Haven't the autos taken the place of the horse yet?"

Undeniably the autos have increased in great numbers—surprisingly so—but instead of hurting the horse I claim it has been a great blessing in the big cities. It has saved the horse many a long, tiresome trip, and if it had not been for the auto the horse would have been at so prohibitive a price by this time that comparatively few people would be able to own one. They are high enough now to induce farmers to raise them, and the price remains persistently high. If the automobile were taking the place of the horse to any extent the price of the latter would depreciate. This seems to me a logical conclusion. If the demand for the horse decreased we would expect to see fewer of them in use and the practice would decline, but so far as the number of horses in use is concerned we find a report from the license bureau of Chicago that there were 2,000 more horse-vehicle licenses issued in 1912 than 1911, and city practice is greater than ever. If any city practitioner finds his income decreasing he can account for it on the ground of increase in the number of veterinarians; but we find that there are just as many sick and lame horses, just as many night calls to colic, and more accidents, many of them due to recklessness of chauffeurs, in our practice, than ever.

The reports from the country practitioners are generally good, and some say practice never was better. Country practice to-day is largely among cattle, sheep and swine. Farm animals

\* Read at the meeting of the Illinois State Veterinary Medical Association, July 10, 1913.

are so valuable that owners cannot afford to neglect them; consequently a qualified man is sure of a good living in any stock raising section of the country.

If any veterinarian is not doing well in practice to-day, let him investigate himself and his methods and he will find the cause of his failure. There is an encouraging demand for veterinarians to settle in all parts of the country, proving that veterinary service is appreciated and it is becoming as popular and fashionable to speak of "my veterinarian" as it is of "my doctor," "my lawyer," or "my dentist."

In addition to everyday practice, there are many other lucrative openings. The Bureau of Animal Industry employs about one thousand in meat inspection and quarantine work. State and municipal officials are becoming numerous at fairly fat salaries. The army, prospectively, offers alluring opportunities for those well enough qualified to pass their rigid examinations. Agricultural colleges and experiment stations offer enticing inducements to the more scientifically qualified. The public is becoming rapidly educated up to the desirability of municipal meat and milk inspection. In the working of the pure food laws, the veterinarians have an opportunity to push this feature, greatly to the advantage of and additional prestige to the profession.

The profession occupies the position to-day of being the greatest conservator of the material wealth in an industry which is the greatest in this country. Consider for a moment how successfully many of the outbreaks of contagious diseases of animals have been controlled and eradicated. There are only two diseases prevalent in this country to-day; viz., tuberculosis and hog cholera; and some progress is being made in these.

The best evidence of prospective, continuous evolution towards a higher plane for the profession is in the character of the teaching institutions. The veterinary colleges occupy the unique position of being the only educational institutions in the country under federal supervision. A veterinary college, to get government recognition, must comply with the requirements, as to the curriculum, of the Department of Agriculture, Bureau of Animal

Industry, Bulletin No. 150, and be subject to annual inspection by a committee appointed for that purpose by the Department. The curriculum of a veterinary college to-day compares favorably with that of an up-to-date medical college. Consequently, the young graduate leaves college to-day possessed of a much more extended fund of knowledge than did his brother of a few years ago.

An era of scientific agriculture in this country is apparent to all observers. Improvement in quality of live-stock is inevitable, and the veterinary profession will prosper in direct proportion to the prosperity of American agriculture. There is no excuse for pessimism. Let us all be optimists and go prepared to win.

'Twixt optimist and pessimist the difference is droll;  
The optimist sees the doughnut, the pessimist the hole.

NOTE.—The foregoing article from the pen of our esteemed friend, Prof. A. H. Baker, of the Chicago Veterinary College, is very interesting and very encouraging to both the practitioner and the student of veterinary medicine; the more so, because it comes from an old practitioner whose long association with student bodies has accentuated in him his natural conservativeness, so that he seldom makes a statement without first having carefully weighed the facts connected with it. We share Prof. Baker's views in regard to the future of the veterinary profession, in contradistinction to that of those that are looking forward to the "horseless age." Our observations in the City of New York have impressed us very similarly to those of Prof. Baker's in Chicago. It has been conservatively estimated that about 20 per cent. of the trucking in New York could be more economically done with auto-trucks than it could be accomplished with horses, the other 80 per cent. being more economically done with horses. But few stop to consider that the general trucking business of the city has been increased through the general increase in business resulting from the benefits of auto-trucking on the long hauls; an increase made plain in Chicago by the fact—as stated in Prof. Baker's article—that there were 2,000 more horse-vehicle licenses issued in that city in 1912 than had been issued in 1911. It is also evident that the increase is general, from the statistics published in the March issue of the AMERICAN VETERINARY REVIEW, on page 639, which showed that there was an increase in the horse population of the United States on January 1, 1913, of 58,000 and in mules 24,000 over that of January, 1912. Aside from the optimistic view that is actuated by these conditions with general practitioners in large cities, encouragement is also to be derived from the large field opened up in the live-stock industry of our country, and veterinarians should become close and enthusiastic students of general breeding problems.—[EDITOR.]

MOVED FROM OHIO TO OREGON.—Dr. W. B. Cook, Hyde Park, Cincinnati, Ohio, has moved to Albany, Oregon. We trust the doctor will enjoy the equable climate of that charming State.

ASSISTANT STATE VETERINARIAN OF NEBRASKA FINDS IT INDISPENSABLE.—"Please find draft to renew my subscription for another year. I find the REVIEW indispensable."

## PEPTOTOXIN PRODUCTION BY THE BACILLUS OF CONTAGIOUS ABORTION IN CATTLE.\*

BY JOHN REICHEL, V.M.D., AND MALCOLM J. HARKINS, V.M.D., THE MULFORD LABORATORIES, GLENOLDEN, PA.

The English Commission appointed by the Board of Agriculture and Fisheries to inquire into epizootic abortion of cattle, in their report include the statement, "Apparently, however, no free toxins are formed by the bacillus (*abortus*) in culture."

The reaction in infected cattle usually appreciable by a rise of temperature, etc., in from 8 to 18 hours after a subcutaneous injection of abortion, *i. e.*, an extract of the bacillus and its products prepared as is tuberculin with tubercle bacilli is generally attributed to toxins of which the English Commission remarks, "The toxins, then, which cause the febrile symptoms after inoculation are endotoxins, that is to say they are contained inside the bacilli." From this it may be taken that the opinion is held that the bacilli in culture form no other toxins than endotoxins.

From our experiment we have drawn the following conclusions:

1. The bacillus of contagious abortion of cattle (*abortus bacilli*) produces a toxin on peptonized culture media but not on peptone free media.
2. Thorough washing will rid the bacilli grown on peptonized media of the toxin.
3. The toxin is included in the alcoholic precipitate of the supernatant liquid of the suspension of the bacilli grown on peptonized agar.
4. Sixty-five degrees centigrade for 30 minutes apparently has no effect on the peptotoxin.
5. Cattle must be sensitized to react to the peptotoxin.

\* Abstract from "Centralblatt für Bakteriologie Parasitenkunde und Infektionskrankheiten," by above authors, and read at the meeting of the Society of American Bacteriologists, held at the Rockefeller Institute for Medical Research, New York, January 2, 1913, and also at the meeting of the Philadelphia Pathological Society, January 23, 1913.



6. *Bacillus typhosus*, *coli communi*, tetanus and pneumococcus cultures on peptonized agar reveal the presence of peptotoxin, when injected into animals sensitized to the abortus bacillus or its products. The peptotoxin of these organisms probably have much in common if they are not one and the same substance, because animals can be sensitized with one for any of the others.

7. No reactions were observed following the injections into the sensitized animals of peptonized agar cultures of the diphtheria bacillus, *staphylococcus aureus*, nonhemolytic streptococcus, and hemolytic streptococcus which may mean that these organisms did not produce peptotoxin or only in very small amounts.

8. Rabbits develop agglutinins following the injections of thoroughly washed and unwashed abortus bacilli equally well. The peptotoxin injected with the unwashed bacilli is not essential in the production of antibodies.

9. In that the abortus bacillus produces a peptotoxin in a proteid medium and it is a possibility that peptotoxin is produced in milk with the bacilli from cattle in infected herds, the wholesomeness of the milk is more questionable.

---

DALRYMPLE IS NAMED AS ONE OF STATE'S DELEGATES.—Dr. Fred J. Mayer, president of the Louisiana State Medical Society, has appointed Dr. W. H. Dalrymple, of the Louisiana State University, a delegate from the Louisiana State Medical Society to the Seventeenth International Medical Congress, which convenes in London, Eng., August 5th to 20th, of this year. Dr. Dalrymple has been an honorary member of the Louisiana State Medical Society for the past 11 or 12 years.

As Dr. Dalrymple hopes to be able to attend the Tenth International Veterinary Congress in London in 1914, it is doubtful whether he will be able to accept the honor conferred on him by President Mayer of the Louisiana State Medical Society.—Baton Rouge *State-Times Advocate*.

A BROTHER IN UTAH WRITES: "Enclosed find my subscription for another year; I can't practice in a profitable way without the REVIEW."

## REPORTS OF CASES.

---

### A FACIAL CALCULUS.\*

By B. F. KING, D.V.S., Shrewsbury, N. J.

A person to fill a position in life must be perfectly acquainted with his or her subject; for what would you or I, as a veterinarian, do diagnosing a case did we not know the different parts and their accessories. For instance, the eye is the perception of thought, with it we perceive.

In the year 1886, on the eighth day of April, I was by a unanimous vote of the Veterinary Medical Association of New Jersey made an active member of the said association. It has been my highest aim since to do what I could to elevate the profession.

Two years following I was elected treasurer, and continued to hold the position for fourteen years.

Since then many changes have taken place, many new members have been added to the association, and I am sorry to say many have been dropped, and sad as it may seem, I have helped to lay in the cold grave several beloved brother members. And still the organization goes on with all its friendly associations and good times, and to-day we stand one of the foremost associations in the United States.

It is not my intention to give you any elaborate ideas, but I do hope to give you something to repay you for the time spent in listening to what I have to say. If I do not, my mission has failed, for I consider it binding upon every member to contribute something in the course of the year to advance the interest of the association, or his mission as a member has failed.

Calculus, a Latin word, is defined by Webster as any concretion formed in any part of the body. There are different named calculi. There is abdominal calculi, the kidney calculi, the bladder calculi, the stomach calculi and numerous others, but they all narrow down to the one definition, a hard concrete substance.

---

\*Presented to the Veterinary Medical Association of New Jersey at its twenty-ninth semi-annual meeting at Jersey City, July 10, 1913.

But the one I am about to speak about is a facial calculus (formed by a sediment, a waste from a salivary gland).

My subject to-day is a local one. It is an experience I have had.

I was called to see a horse that had glanders, or it was supposed that he had, as he had been treated by the entire community, and their efforts had failed. But, to my astonishment, I found a large gray horse with an abscess upon his cheek, as large as a saucer, filthy; the surroundings looked as if it had run not only for days but for months without cleansing, I was informed by the owner that he had owned the horse for five years and in that time it had never healed.

My first impression was that the trouble resulted from a decayed tooth. But upon examining the mouth, I was surprised to find him a young horse, with a perfectly clean mouth. I decided at once to remove the entire mass, and find the seat of trouble or discharge.

Knowing that the cheek was composed of muscular tissue, fat, nerves, blood vessels, etc., also that in that solid mass we find a deep-seated muscle known to us as the *Rectus Anticus Major*, a deep-seated muscle which it was not best to disturb if possible.

Over this muscle was located the buccal gland, the large gland which contains the reservoir, into which flow three streams of saliva. This reservoir empties its contents just back of the last molar, and plays a very important part in the secretion of saliva.

But there is another of greater capacity, called the parotid gland, running down at the base of the ear, which gives off a long duct called *Steno's duct*, which passes on and empties its contents opposite the first molar.

These glands were, I might say, all destroyed. They all formed one solid mass of gristle-like substance.

Thus far I have endeavored to outline the secretion of saliva from this last gland, the parotid or *Steno's duct*. I located and removed the stone I present to you to-day.

This last-named gland had been obstructed by a foreign body from an accident some twelve years previously, having penetrated the gland; all the solids from the saliva had been taken up, thereby robbing the system of the essentials to support the animal and forming the stone.

When you obstruct any organ of the human or animal mechanism, all parts are more or less affected.

The saliva which assists in masticating the food is continually flowing whether awake or asleep, although much faster when awake and taking food into the stomach. It is estimated by scientists that the flow is about one gallon every hour when a horse is feeding.

What would be the outcome should this secretion be obstructed? It would overflow its regular course (would it not), and in what condition would the food pass into the stomach? In a perfectly dry state.

By cutting off or obstructing the action of the submaxillary gland you would reduce the source of supply of nourishment to the buccal membrane, and it becomes dry and hard as the foot of a horse suffering with navicular trouble, and cannot supply the nourishment required to the stomach.

The saliya is not mere water. It has constituent parts. "Lassaign," I think, if my memory serves me right, was a French chemist. First he analyzed the salvia from a horse and found it contained solids, and then he went still further and found that it contained three-fifths solids, leaving two-fifths water, and he went still further and found their composition, which demonstrated the fact that they were composed of carbonate and phosphate of lime.

His analysis demonstrates to us all very clearly that water would not take the place of saliva.

Whereas, in the human being the saliva differs in its composition, Bidder and Schmidt, two German chemists, give 995.16 in 1,000 parts of water, leaving but a few parts solids, and the composition of the solids differs materially from the animal.

The solids are composed of sulpho cyanide of potassium, chloride of potassium, chloride of sodium and magnesia.

Gentlemen, when you obstruct the flow of saliva into the stomach, which is composed of certain elements or solids, what must be the results? The liquid portion will by a circuitous route find its way into the stomach, but the stomach is robbed of the essential elements or parts, the solids.

Look at the animal from which I removed this formation, the stone. Just as one part of a machine, being broken, throws the whole machine out of adjustment, so the stone or calculus in the jaw had affected the whole system, the stomach, spleen, liver, kidneys and all other organs, in an indirect way, and rendered the whole condition of the animal one of general debility, with a running sore as large as a coffee cup.

This calculus is something out of the ordinary. To obtain

that formation, you must puncture the parotid duct or buccal gland by some foreign body, and let it remain and obstruct the flow of saliva.

I have made a search for the history of this horse. I find he was foaled on the outskirts of Lakehurst, a small hamlet just south of Lakewood, in Ocean County, about fourteen years ago. When one and a half years old he met with an accident. He was supposed to have run into a fence and bruised his cheek.

From that time on he was attended by several veterinarians, but the cheek would not heal.

After the operation it healed directly, and to-day there is no disfiguring of the face whatsoever.

In closing this paper, I have only to say that I have endeavored to explain my subject plainly and concisely in my humble way.

Mr. Wanamaker once said to a company of young students when he was approached on the subject of education, "The ignorant man is always placed at a great disadvantage."

This world is a great university. From the cradle to the grave we are always in God's great kindergarten, where everything is trying to teach us its lessons, to give us its great secrets.

Some people are always at school, always storing up precious bits of knowledge; everything has a lesson for them.

It all depends upon the eye that can see, the mind that can appropriate. Very few people ever learn how to use their eyes. They go through the world with a superficial glance at things; their eye pictures are so faint, and so dim. The eye is intended as a great educator; the brain is a prisoner, never getting out to the outside world. It depends upon its five or six servants, the senses, to bring it material, and the larger part of it comes through the eye. The man who has learned the art of seeing things looks with his brain.

---

### "UNUSUAL CASES WITH RECOVERY, MET IN A COUNTRY PRACTICE."

By Dr. L. E. THOMPSON, Newman, Ill.

*Torsion of the Uterus in a Mare*—Mare was due to foal, and on morning of the 17th of June, 1910, had slight colicky pains, which continued occasionally (though the mare had a fair appetite), until June 24th, when advice was first sought.



Upon examination the uterus was found turned completely, as indicated by the spiral turns of the os, and as to reducing the condition, it was impossible with the hand alone, as only two fingers could reach the foal. Hopples were then placed on the mare, and assistants instructed to roll her over once while with one hand entering the os, I was endeavoring to reduce the spiral turns. We were successful, and the colt was delivered with little difficulty.

From the decayed condition of the foal and foetal annexes (the latter had entirely decomposed), the foal must have been dead nearly a week. Uterus was thoroughly flushed after delivery, and again on the 26th and 28th. At the end of ten days the mare was apparently as well as ever and has not been bred since that date.

*"Urethral calculus" in a twelve-year-old*—Afternoon of 21st of September, 1910; animal showed a little uneasiness, kicking at the abdomen and lying down occasionally; on morning of 22d the animal was in great pain, lying down frequently, arising immediately, kicking at the abdomen, switching the tail and most pronounced attempts to urinate, while the urine only dipped from him.

The owner called, stating "his horse had kidney trouble and couldn't pass his water"; for once he was right, for in nine cases of bowel trouble out of ten the owner is confident that it is "his kidneys."

Examination per rectum revealed the bladder greatly distended, and as the animal was thin the calculus could be easily located just above the ischial arch; as the animal was of a quiet disposition (not deemed best to cast with the bladder so distended) with the twist applied, he was backed to manger. After usual aseptic precautions an incision was made from above on to the calculus. As soon as the incision was made the urine passed freely. Calculus was then removed with difficulty, as the lining membrane of the urethra adhered to the roughened surface. Not having any catgut, the urethra was sutured with silk, then outer wound sutured only partially.

No urine escaped from the wound. Rectal examination revealed the bladder in good condition, with no sign of other calculi. Ten days later sutures were removed from the urethra and the remaining wound sutured. The animal didn't miss a feed after the operation, and to-day is as well as any animal.

Calculus measured 2 inches in length and 1 inch in diameter.

*"Oesophageal obstruction in a ten-day foal"*—Owner called

evening of March 11, 1911, stating a "little colt was choked." The colt gave plain symptoms of asphageal obstruction, and examination revealed a solid object about an inch long by one-half inch in diameter in the upper third of the cervical region.

Manipulation failed to move the object either way. We decided this was a small piece of a cob, and secured a small apple twig, pliable and with length enough to reach the stomach. After wrapping this with muslin, enlarging the end by repeated wrapping and then with this well-coated with vaseline, it was passed and the object passed into the stomach.

Colt then nursed immediately, which he had not been able to do for three hours.

### MONSTROSITY.

By FRANCIS ABELE, JR., V.S., Quincy, Mass.

In a barn being repaired after a fire, lay a two-year old heifer stretched on the floor of lintel, unable to raise her head. She and the others were fed and bedded on coarse rain-damaged hay. From this heifer's vulva projected the greatly swollen head of a dead but not decomposed calf. The swollen head was the result of three men's hauling on it.

Being too large to return, head was removed. Withdrawing of first leg took an exceeding amount of time and energy, as leg would not flex. Loops back of knee would not flex it, and legs would not parallel although surely front ones. Traction at last brought a large calf with knees stiff and facing each other. Fetlocks were half flexed, stiff and rigid.

Now, was the condition a simple monstrosity? Was it a result from fire? Or was it a result from feeding damaged hay?

### "COBBLER STICK TO YOUR LAST."

By SAME.

An ex trained-nurse, now comfortably married, had a present of a Boston terrier, small, well-formed, wonderfully alert, but too high-strung. He would never play with another dog, but would rush them from the neighborhood. He would come at a visitor's heels. I could suggest no cure, so he was taken to rescue league, where he was emasculated. The wounds infected,

the dog's courage was gone, he had gastritis and a nasty gleet from the prepuce. As the dog was four years old I could not suspect, much as I wanted to, distemper. There came a mucus discharge from eyes, so ex-nurse took dog to oculist, who suggested syphilis or gonorrhœa, and I was duly informed. I took cultures to a laboratory medical man, who found many streptococci, some micrococci, but could not distinguish gonococci. In the meantime variola had broken out and I had a diagnosis to suit myself of our old friend distemper. I would have expected an excess of staphylococci. The excitement caused by the diagnosis of the oculist can well be imagined. Of course it was easy to dispose of the syphilis diagnosis. It was harder to disprove gonorrhœa, and to an educated person, this is not a welcome visitor to the home. Personally, I should have proved it before giving diagnosis.

#### GENERAL POST-MORTEM LESIONS OF LIGHTNING STROKE IN EIGHT HORSES AND TWO COWS.

By L. B. MICHAEL, M.D.C., Collinsville, Ill.

There is a farmer's insurance company here who pay indemnity of live stock, etc., killed by fire or lightning. Consequently I was called in to decide whether or not said animal was killed by lightning.

**LESIONS.**—Skin very dry and adherent to the sub-cutaneous tissue, often only unilateral, this makes skinning very difficult.

Mucous membranes of all external openings highly congested.

Rapid decomposition of the carcass.

Kidneys contain the most prominent lesions. The uriniferous tubes and capillaries are as if shaken apart. The appearance is as if par-boiled, slightly bleached.

**Lungs.**—Red-hepatization, either unilateral or bi-lateral. Pleura congested.

**Peritoneum.**—Congested in places. If a very strong bolt the intestines will also be congested.

**Spleen.**—Capsule normal. Size normal, the parenchymatous tissue is very soft and nearly black. Liver and gall normal.

A living case might be mistaken for a case of paraplegia or azoturia. Five years ago these few remarks would have helped me very much.

## ABSTRACTS FROM EXCHANGES.

---

### FRENCH REVIEW.

By PROF. A. LIAUTARD, M.D., V.M.

INTRA-INGUINAL AND INTRA-ABDOMINAL FUNICULITIS [*P. J. Reben, Army Veterinarian*].—A young horse, recently received in the ranks, has a fistulous tract at the right cicatrix of castration. Treatment with iodide of potash and antiseptic injections seem to be followed by recovery. Eight months later the character of the animal is all changed, he becomes ugly. He gets lame, and in the scrotal region there is a fusiform tumour, hard and fistulous; it extends well up to the right superior inguinal ring. Operation is decided. An incision of the skin exposes a large abscess. The inferior extremity of the testicular cord is exposed and the champignon traced to the crural arch and the small oblique. It is continued in the abdominal cavity and the cord is amputated with the ecraseur. Antiseptic dressing is applied. Manifestations of peritonitis developed with fever lasting for 20 days, and temperature between 39 and 41 degrees C. Gradually, however, improvement set in and recovery was hastened with cacodylate of soda. The funiculitis weighed 750 grams, was 8 centimeters in diameter and 20 in length.—(*Rev. Veter. Milit.*)

EVENTRATION, SURGICAL INTERFERENCE, RECOVERY [*Capt. Ball, Army Veterinarian*].—After an accident occurring in the stable, a five-year-old mare had in front of the umbilicus a laceration with subcutaneous tearing eight centimeters long. The wound is anfractuous, muscles and peritoneum involved, and loop of intestines protrudes. Immediate interference is necessary. There is no intestinal perforation. With thick catgut, a suture, with separated stitches, is made taking in peritoneum, the aponeurosis of the great and small oblique and the transverse of the abdomen. The skin is closed with antiseptic silk and a bandage applied round the body. The following day the animal remains very irritable. The general condition is good and appetite

fair. Temperature  $39^{\circ}$  C. Oedematous swelling takes place and two stitches removed allow escape of abundant serosity. Antiseptic dressings are continued and recovery completed in 41 days.—(*Ibid.*)

OCCIPITO-ATLOID WRENCH [*Major Payrow, A. V.*].—Suddenly frightened, the mare "Hirondelle" pulls back violently, and with jerks on her halter, slides on her hind quarters and falls. She is taken then with true convulsions. Her muscles are shivering and taken with spasmodic contractions. The breathing is accelerated, pulse full and heart beating rapidly. The mare is unable to rise, the fore legs are paralyzed. The head is twisted on the neck, the median plane of it forming with that of the neck an angle of about 30 degrees. The whole region is painful and motions of the head impossible. Moist bandages are applied to be renewed every three hours. Nitrate of pilocarpine injected. The next day the mare is up, and the symptoms of medullary irritation have subsided. Iodide of potassium is prescribed. After five days, improvement is much marked. After a month of nursing, the mare is to all appearance recovered, but with a permanent stick neck. The head remains bent with the tip of the nose turned to the right. The left side of the occipito-atloid joint forms a convexity. On the contrary, on the right side the atlas shows a deep concavity. The motions of the head are limited. Flexion and extension are very reduced and the lateral movements almost impossible.—(*Rev. Veter. Milit.*)

COMPLETE FRACTURE OF THE RADIUS [*Lieutenant Nicolas, Army Veterinarian*].—Light draught horse of eight years receives a kick on the inside of right fore arm, while being turned out in a field. He is found with the right fore leg resting on the toe of the foot, back of the left leg. He is in great pain and bleeding from a wound above the right knee. The diagnosis is made and killing is recommended. The animal is valuable, the owner declines. Four days after, a bony piece sloughs out, it measures 7 centimeters long, 4 in width. The animal had been left turned out, and thirty-one days after the conditions remain about the same. Suppurating wound, crepitation, mobility of the segments of the radius. The owner still refuses to have the poor brute killed. He is still kept outdoors. Soon the wound granulates well, the leg has a tendency to a normal con-



dition. The horse rests on it and gradually walks on it; the muscles, much atrophied, are filling by degrees, and after thirteen months there remains only a slight lameness in walking, and gradually the horse is returned to work with a large exostosis of the forearm and a slight deviation of the leg when compared with that of the opposite side. In time the lameness kept going away and there remained but a marked circumduction of the extremity.—(*Ibid.*)

RENAL LITHIASIS IN A MULE [*Lieut. A. Monnier, Army Veterinarian*].—Aged 10 years, a mule shows deep anhemia. He has also difficulty in urinating, and the urine is mixed with blood. Collected in a glass, there is a big calcareous deposit with a layer of mucus on the top of it. Examination of the bladder through the rectum is negative. The loins are particularly sensible to pressure. Balsamic and internal antiseptic with flax seed teas are prescribed. The condition does not improve, and finally death takes place. In the right kidney there was found a calculus weighing 115 grammes, formed of five separate pieces, articulated together by diarthrodial facettes. It had an irregular form and was composed of a median portion occupying the pelvis, with a prolongation running in the ureter. It was essentially made of carbonate of lime. The ureter was normal and the bladder the seat of catarrhal inflammation.—(*Rev. Vet. Milit.*)

FRACTURE OF THIRD PHALANX AND BIER'S METHOD [*Capt. Lemire and Lieut. Ducrotoy, Army Veterinarians*].—A fifteen-year-old mare is very lame on the left foreleg. Foot examined shows general sensibility and heat principally round the coronet and plantar surface of the hoof. Rotatory motions are very painful. Crepitation not detected, but percussion on the sole and the frog brings out violent reactions on the part of the animal. Cocaine injection is followed by removal of the lameness. After some hesitation a diagnosis of fracture is made and with severe prognosis advanced.

*Treatment*—Hot foot baths, bandage of Bier 10 hours a day applied in the middle of the cannon. Although the lameness was very great at first, it gradually subsided, and after twenty days the treatment was modified by a circular groove round the hoof, immediately below the coronary band and blistering frictions on the coronet. After two months the mare returned to her work perfectly sound.

Dying some six months after, an examination was made of

her foot. It showed a fracture of the third phalanx in three pieces perfectly united.—(*Rev. Veter. Milit.*)

A CASE OF OSTEOMALACIA RECOVERED [*Mr. A. Romany*].—A six-year-old pony has no history of previous ailment. When he was seen by the writer he had marked deformity of the face, synovitis of almost all the joints of his legs, is very lame. His loins are weak and his fetlocks are knuckled in front and behind. Otherwise his general condition is satisfactory. The horse has been treated before with arsenious acid, glycerophosphate of lime and powdered cinchona. Osteomalacia was diagnosed and a powerful arsenical treatment prescribed—606 being selected as the proper ingredient. Two intravenous injections of Salvarsan was given, in doses corresponding to two human doses maxima. Eight days after the animal walked much better, the synovitis had almost entirely disappeared, there was no more lameness in walking. Ten days later the horse could trot, mounted by a light boy. Gradually the condition and general aspect improved, but the swelling of the face has remained, although less marked.—(*Repert. Veter.*)

## ITALIAN REVIEW.

By Prof. A. LIAUTARD and E. P. CESARI, M.V.

EFFECTS OF SOME DRUGS ON THE COMPOSITION OF COW'S MILK [*Oliviero Lanzoni*].—Sulphate of soda, of magnesia, rhubarb, aloes, arsenic were used.

The following conclusions are the results:

1. Leaving aside the question of the passage in the milk of the rhubarb, aloes and arsenic, it is very probable that, contrary to the general affirmation of Malafert, the sulphate of sodae or of magnesia do not go through the milk.
2. The drugs that were used did produce really noticeable changes (explained physiologically) in the chemical composition of the milk, and which are related to the principal nutritive constituents of milk.
3. Consequently these milks of pathological origin, whether they have lost all nutritive power, by the marked diminution of fixed principles, or because they have become improper for food, by the increase of the caseine which renders them indigestible after the administration of sodae or magnesia salts; these milks

are not hygienic and ought not to be sold, unless for special uses and as medicinal milks.—(*Clinica Veter.*)

CONGENITAL ANOMALIES OF THE EYE [*Stefano Rirabella*].—In an eight months' old cat, of common breed, the anterior part of both ocular globes is almost entirely covered with long tufts of silky hairs. The skin of the sub-orbital region is continued without interruption on the globe of the eye and is intimately adherent. It gradually grows thinner about the inferior quarter of the cornea when it begins to get transparent. The conjunctiva is missing, as well as the inferior conjunctival cul-de-sac, and the upper eye lid is reduced to merely an external cutaneous covering. There is no palpebral slit. The inferior eye lid completely and normally developed is continued without line of demarkation with the skin above. Sight, although very limited, is not entirely abolished.—(*Clinic. Veter.*)

ON DOG DISTEMPER [*Antonio Maja*].—These are contributions to the study of cellular inclusions in dog distemper. The researches of the author have been made on three cases of the broncho-pulmonary form and one of nervous form.

In these various cases Maja has found endo-cellular bodies, having a characteristic structure, of various diameter, but much alike and containing small rounded formations, oval and of about the same size.

These bodies had various localizations, according to the clinical form of the disease. In the broncho-pulmonary they were found in the epithelium of the small and middle sized bronchii. They are the smallest. In the nervous form they were found in some parts of the central nervous centre; they were the biggest. Contrary to Babes, they were not found in the sections of the horn of Ammon.

The bodies described by Sinigaglia called "Negria canis" by their specificity, their constant structure, their seat which corresponds with the clinical forms of the disease, from what is known of other diseases with filtrable viruses and principally of rabies, ought to be considered as the specific forms of dog distemper.

The corpuscles described by Lentz, homogeneous and without structure, are, according to the writer and to Sinigaglia, who affirm it, the result of the process of degeneration of the nervous cell.—(*Ibidem.*)

ANGIO-FIBROMA OF THE CHORION IN A SLUT [*Carlo Sparapani*].—A King Charles bitch, five weeks gone in pregnancy, was

taken with pains of abortion. Notwithstanding effective therapeutic treatment resorted to, so as to prevent abortion, a foetus six centimeters long was expelled. The bitch recovered without trouble. The quantity of amniotic liquid expelled was much inferior to normal. On the external surface of the placental chorion there was a reniform tumour, as big as a large nut, yellowish, and which proved to be an angio-fibroma. It had been possibly the cause of abortion.—(*Il Nuovo Ercol.*)

TWO CASES OF "ABORTED OVA" IN COWS [*A. Vachetta*].—In 1882 the author had called the attention to "moles" in cows. They are ova which have a certain degree of development, but only one of the envelopes. When these ova are expelled there is found no trace of embryos nor of foetus.

Vachetta reports two more cases.

Aborted ovae can be found alone or with well-developed foetus. They differ much from uterine cystic productions by the presence of the placenta on their external envelope.

The question is of rather great importance; first, because this anomaly may constitute a complication of pregnancy and of delivery or again simulate a normal pregnant state; second, because the development of a single aborted ova is for the owner of the animal a loss of time and money; third, because the purchase of a cow bought as pregnant and having only an aborted ova may give rise to law controversy and place the veterinarian in a difficult position.—(*Il Nuovo Ercol.*)

PRIMITIVE PERITHELIOMA OF THE INGUINAL LYMPH GLAND IN A MARE [*A. Galli*].—The animal was six years old. Some five months ago a small swelling, no bigger than a small nut, developed in the right inguinal region. The swelling became warm, painful; an abscess was suspected and treated. In a few days it ulcerated spontaneously, giving escape to yellowish fluid, mixed with blood. Then all trouble disappeared. Shortly after a second swelling developed, close to the spot where the first had been. Notwithstanding treatment, it kept growing, became as big as a turkey's egg. It was painless. A neoplasm was suspected and the extirpation performed. The tumor examined under the microscope was found to consist of cellular proliferations of epithelioid type, surrounding blood vessels with embryonar structure, which united and anastomosed, and gave rise to patches where the neoplastic tissue affected the aspect of a diffused sarcoma. It was a perithelioma.—(*Il Nuovo Ercol.*)

## CORRESPONDENCE.

---

### ARECOLINE AND STRYCHNINE.

Newman, Ill., July 28, 1913.

*Editor AMERICAN VETERINARY REVIEW, New York:*

In the July number of the REVIEW, Wilfred J. Stokes asks for some experience with the use of arecoline and strychnine combined.

Experience with the use of both combined dates back to the coming into general use of arecoline, probably eight years or more. As to arecoline and strychnine combined in a single tablet, it may be all right, but I prefer them in separate tablets.

When I first began using arecoline the 1 grain tablets were used; but found they were too active, and many times would have to divide one, which was tedious and inaccurate.

I prefer the  $\frac{1}{2}$ -grain tablets of arecoline and  $\frac{1}{4}$ -grain of strychnine separate, which I combine in one dose.

As to doses, they may be repeated as often as the symptoms indicate. In regard to its uses in different forms of bowel trouble it is absolutely essential.

Gastric flatulence, and especially in connection with intestinal flatulence, this has been kept up continuously for twelve hours; repeated  $\frac{1}{2}$ -grain to 1-grain doses every 30 to 60 minutes; for the action seldom continues more than 60 minutes.

Unless the animal is affected with chronic constipation and takes a large dose (I know of two or three in which I have given 1 grain of arecoline,  $\frac{1}{4}$  grain strychnine and repeated arecoline in fifteen minutes and then probably another grain in 30 minutes), I usually begin with  $\frac{1}{2}$  grain of arecoline and  $\frac{1}{4}$  grain of strychnine, and then if animal does not show symptoms of salivation, increased peristalsis of the bowels and restlessness (if lying quiet) another  $\frac{1}{4}$  grain is given (*no strychnine*), then at the end of 60 minutes probably another  $\frac{1}{2}$  grain of arecoline and  $\frac{1}{4}$  grain of strychnine.

Have given the drug to foals not eight hours old, where injections, oil and salts, had had no effect, and with good result.

As to its varied use, also in the treatment of heat-stroke with rapid breathing, nervous excitement, muscles rigid, arecoline *alone* in small repeated doses gives good results.



Unless a drug could be found to take its place, and at the price, I would be tempted to quit practice if I could not obtain arecoline; for with its use, many times in an hour from the time you are called to a case of colic you are ready to leave with animal eating.

It is always better to begin with a small dose and repeat often, for with an overdose, especially with arecoline alone, there will be great weakness, profuse salivation, deep breathing and probably death. Though I have not had this misfortune yet, some have been very near it.

DR. L. E. THOMPSON.

### "ARECOLINE AND STRYCHNINE."

EMBRO, ONT., CAN., August 9, 1913.

Editor AMERICAN VETERINARY REVIEW, New York:

Having taken the REVIEW since I graduated in 1906, I feel I cannot do without it; and I read with much interest the article on page 402, July number, written by Wilfred J. Stokes, and was anxiously looking forward for the August number, thinking some one would have made reference to it.

I am very sorry Dr. Stokes did not hold a post-mortem, as I am of the opinion that he would then have found the trouble.

About four years ago I was called to examine a horse which presented identically similar symptoms. I injected hypodermically, arecoline hydrobromide, grains 2; strychn. sulph., grains 1. In one hour I gave arecoline hydrobromide, grains  $1\frac{1}{2}$ , strychn. sulph., grains  $\frac{1}{2}$ , and in fifteen minutes he fell backwards, dead. I was almost positive I killed the horse, but, however, I decided to face the music and hold a post-mortem. The result was, I found a case of strangulation of the intestines, combined with an internal hemorrhage.

I frequently use these drugs combined, and have yet to see the first ill effect.

Just one week ago I was called to see a bay gelding weighing 1,400 pounds.

*Symptoms*—Violent pain, spasmodic colic, regurgitations.

*Treatment*—Hypodermically, arecoline hydrobromide, grains 2; strychn. sulph., grains 1; rectal injections.

In 30 minutes, hypodermically, arecoline hydrobromide, grains  $1\frac{1}{2}$ , strychn. sulph., grains  $\frac{3}{4}$ , and in one hour, he made a complete recovery.

I hope that these few lines will enlighten Dr. Stokes suffi-

ciently to use the combination of arecoline and strychnia with safety.

H. B. ATKINSON, V. S.

### CASTRATING STANDING VS. ADVANCED VETERINARY SURGERY.

Grenada, Miss., July 22, 1913.

*Editor AMERICAN VETERINARY REVIEW, New York:*

DEAR SIR—The interest I think you feel in all matters of use to the veterinarian and the discussions which appeared in the May, June and July copies of the REVIEW on castrating a horse standing, or rather the advance of veterinary surgery.

I am therefore encouraged to write a few words endorsing the casting system, which you are at liberty to publish in your journal if you so wish.

I highly esteem the opinions of the gentlemen taking the stand that it is best to operate standing and every veterinarian should be able to do the operation in that way when the occasion demands.

I disagree with the idea that the standing position is the best for most all horses in the routine of veterinary practice. The most of my patients for this operation are unbroken horse or mule colts from one to four years of age. They are not bronchos or outlaws. However, the doctor might think so if he undertook to castrate standing by "getting up close to and keeping up close to," unless he used unwise courage and possessed the fighting skill of Jack Johnson. Conditions are not the same in all states and where horses are on the draft order the standing operation may be best.

The operation is not new. Fifty years ago men that cut boars and bulls with a lick and a pull castrated gentle horses standing.

Not wishing to take more space I will not enter into a detailed discussion for or against the advantages or disadvantages of the question further than to say, when I attended the Chicago Veterinary College I learned Dr. Merillat's plan, the best in the world, how to cast and secure, which is so simple and safe that I cannot get out of the plan.

If we stick to the point of advanced veterinary surgery it seems to me that it is in better keeping for the profession to cast.

I am, with every expression of regard,

Yours very truly,

WM. P. FERGUSON.

## SOCIETY MEETINGS.

---

### ALABAMA VETERINARY MEDICAL ASSOCIATION.

The sixth annual meeting of the above association was held in Birmingham Ala., June 6, 1913. After routine of business the following papers were read:

Dr. J. I. Handley read a paper on sore mouth in dogs. This paper was a digest of his thesis at the Veterinary College of the Alabama Polytechnic Institute, Auburn, Ala. He had tried to transmit the disease by blood inoculations, by saliva, by scarification of the mucosa, by contact, and in no case was he successful. Unless the well dogs were immune these tests show that sore mouth is not infectious by the ordinary methods. This paper was discussed by a number of the members and various lines of treatment suggested, some of which had been tried with variable results.

Dr. J. S. Andrade, of Huntsville, Ala., read the next paper, on colics.

Dr. O. R. Eatman, of Gadsden, then read a paper on the use of pilocarpine for mild abdominal pains. These two papers were discussed together by all present, and the various lines of treatment were brought out.

Dr. J. E. Threadgill, of Troy, next talked on the therapeutic uses of some drugs. He declares that eserine, pilocarpine and barium chloride should not be used in sand colic. Nor does he advise the use of digitalis. He employs first one-fourth grain each of arecoline hydrobromide and strychnine, and two hours later gives one-half grain of each and does not repeat under three hours.

Dr. R. F. Strickland, of Birmingham, Assistant Meat and Milk Inspector, read a paper on tuberculosis and trichina.

Dr. F. M. Jackson, veterinarian for the Tennessee Coal and Iron Co., of Birmingham, gave a talk on the use of tincture of iodine in treatment of wounds. He employs it full strength at first and thereafter dilutes it and applies only once every two or three days. In open joints he injects full strength once; then applies a blister around joint and puts animal in slings, keeping articulation quiet.

Dr. O. W. Payne, Assistant Milk Inspector of Birmingham, Ala., read a paper on the milk inspection work in Birmingham.

Dr. A. H. French gave a talk on the importance of being able to recognize the difference between ante- and post-mortem clots in the heart and blood vessels. This is of special importance in determining the cause of death and on legal cases.

Dr. A. D. Piatt, of Birmingham, and Dr. W. D. Staples, of Anniston, read papers on their experiences with influenza in horses and mules. During the past winter nearly all Alabama veterinarians had a large number of fatalities from complications. The most common fatal forms of the disease were pleuropneumonia, paralysis of tongue, pharynx, larynx and esophagus. All seemed to think that in cases of paralysis of or about the throat were only temporarily benefited by tracheotomy. All or nearly all such cases die either from septicemia or pleuropneumonia. No one obtained any good from tapping the thorax in pleuropneumonia, especially where the serum was milky and flaky.

Dr. J. E. Threadgill claimed to have good results with cases where there was paralysis of the tongue, larynx or pharynx by putting the case in a clean open air place, allowing animal plenty of fresh water and spraying throat with a long nozzle syringe through mouth with weak solution of salol and potassium chlorate. Such cases were not given anything but water for 5 to 10 days. No soft, or any kind of feed given until the animal recovered so as to be able to swallow water. Threadgill advises to avoid purgatives, digitalis and the trachea tube. He says he threw his trachea tubes away.

Dr. I. S. McAdory, of Auburn, read a paper on radial nerve paralysis. Staples advised injecting turpentine, carbolic acid and water mixture for this trouble.

Dr. C. A. Carey read a paper on the uses and abuses of autogenic and other vaccines, and claiming that the only real scientific, reasonable way to employ such remedies was to use autogenic vaccines and in rare instances monovalent stock vaccines were permissible and polyvalent vaccines should be discarded. All these products are frequently misused and are given credit for doing what the animal body fluids and body antitoxines would have done without them.

The last paper read was by E. M. Duncan, Chief Meat and Milk Inspector of Birmingham, on a city bacteriological department in its relation to public health. He has had charge of such a laboratory for the City of Birmingham for about 10 years and has made it a decided success.

The following officers were selected for the next year: President, Dr. O. R. Eatman, Gadsden, Ala.; Vice-President, Dr. R. B. Nixon, Demopolis, Ala.; Secretary, Dr. C. A. Cary, Auburn, Ala.

The next place of meeting is Auburn, Ala., at the Veterinary College of the Alabama Polytechnic Institute.

On Saturday, June 7th, the entire association met at Dr. D. A. Piatt's Veterinary Hospital in Birmingham, Ala., to witness a polyclinic.

Dr. A. H. French gave a demonstration on the method of giving the preventive inoculation treatment for rabies. He exhibited a case of dumb rabies. The chief symptoms being paralysis of the lower jaw.

Dr. C. A. Cary next operated on one roarer, after casting. He then operated on a roarer in the standing position. This case was given per orum, two ounces of chloral hydrate about one hour before the operation; the skin was cleaned and shaved, covered with tinct. iodine; cocaine injected; the head was held up about in position for drenching; larynx opened; case found to be one of double paralysis (right and left); the ventricles were anaesthetized by placing pledgets of cotton saturated in 4 per cent. cocaine into each ventricle, the cotton was held by forceps in the ventricle a few minutes. The mucosa was then pulled out by the Blattenburg-Williams burr. No retractors were used. The operation did not require over 20 minutes. The essentials of the operation are:

1. Use of chloral.
2. Clean surface and iodine.
3. Cocaine and adrenalin.
4. Careful opening of larynx without injuring cricoid cartilage.
5. Cocaining the mucosa of the ventricles.
6. Removal of the mucosa with the burr and scissors (always insert clean finger into ventricle and then the burr along side of it. Turn and pull out mucosa; cut off with scissors or knife, being sure to get it all and not injure cartilages).
7. Always remove mucosa from both ventricles regardless of whether one or both sides are paralyzed.
8. Feed and water animal on ground and leave it in open pasture, if possible, day and night.
9. Wash only outside and if animal swells and chokes, insert in the opening in the larynx single curved oval tube and steam twice daily.

A case of tetanus; one of septicemia or purpura as a complication with fistulous withers; one of skin tumors and several others were inspected and studied by all the veterinarians present.

C. A. CARY, Secretary.



## ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

The above association convened at the St. Nicholas Hotel at Springfield, July 10, 1913, for an unusually interesting mid-summer session. One hundred and thirty-six members and visitors were present. Dr. Roberts, of the Indiana Veterinary College, and Dr. Sheldon, State Veterinarian of Missouri, were among the visitors.

After President Ryan opened the meeting and the minutes of the previous meeting read and approved, Hon. B. J. Shanley, Chairman of the State Board of Live Stock Commissioners, delivered an address of welcome in behalf of the City of Springfield, which had been selected as the permanent meeting place for the mid-summer session. In the course of his remarks, which were interrupted with frequent outbursts of applause, he brought out conspicuously the deplorable state of affairs which have been brought to the live stock interests by hostile legislation, plainly enacted in the interest of an organized element that is profiting by traffic in tuberculous cows. He made a plea for a closer relation among the live stock associations, the veterinarians and the Live Stock Board in hopes that the unfortunate situation thrust upon our State, despite strenuous opposition and despite all reason, be corrected in the near future. Dr. A. H. Baker responded in appropriate and well chosen words. Dr. W. J. Martin, Chairman of the legislative committee gave a report on the progress made in the last Legislature in bringing pressure to bear to secure a repeal of the anti-tuberculin law and to secure the enactment of laws prohibiting the importation of diseased animals into the State. The report, to say the least, is not encouraging, in view of the cunning trickery constantly practiced to prevent any meritorious measures from coming before the Legislative body for a vote. He mentioned the success met in the early part of the Legislative session in having the bills referred to committees favorable to their passage and the subsequent defeat of them through an unseen hand placing them later in committees so admittedly hostile to such legislation as to assure their death.

The regular program was opened by a very instructive and practical paper on "Shoulder Lameness," by Dr. H. A. Pressler, of Fairbury. The discussion was opened by Dr. Martin and was participated in by a number of members. The discussion vented its force upon atrophy of the shoulder, a condition so serious and common in rural districts. The cause, course and treatment

were ably handled by various members, the concentrated conclusion being that the best treatment consists of intra-muscular injections of irritants—oil of terebinthinae, alcohol, tincture of iodine, etc.—administered at intervals of six to ten days.

Dr. S. Sheldon, State Veterinarian of Missouri, followed with an exceptionally instructive address on the "Intradermal Tuberculin Test for Cattle." As this was the first time this live subject was discussed before the Association the remarks were attentively received and the many questions asked by members showed a thirst for a more detailed knowledge of the mode of administration and observations to be taken. The test had been given to five cows on the day previous to the meeting, by Dr. A. T. Peters, and these were on exhibition at Jerald & Holmes Veterinary Hospital, where Sheldon, Peters and Schwarze gave additional instruction on the subject.

Dr. A. H. Baker then gave a well prepared address on "The future of the veterinary profession." The address was so sanely optimistic that his hearers all agreed they were still glad to be veterinarians. A rather unexpected content of the address was a statement which, on the face of outward appearances, seemed a great surprise. This statement is the reference to the fact that on May 1, 1913, there were 2,000 more horses in the City of Chicago than on May 1, 1912. This statement is based upon the City Collector's report and is not wide of the mark, as all horses used on the streets of Chicago *must* bear a license tag, and it goes without saying that there are no more tags issued than there are horses, as the cost is \$5 per tag.

Dr. E. H. Burt, of Chenoa, read a good practical paper on "Barb-wire Cuts," a subject of exceptional interest to all veterinarians in the Mississippi Valley. The discussion was opened by Ex-President Smellie, who, like Burt, has had a wide experience in dealing with these common traumata of the western farms. Drs. Brownlee, Hassel, Stringer, Mills and Alverson gave various opinions as to the line of treatment best suited to these injuries at the time they are usually brought to the attention of the veterinarian. It is very evident from the statements of these experienced men that barbed wire cuts must usually be treated as open wounds and that good, strong, active antiseptic powders, faithfully and constantly applied, give the best satisfaction. Surgical repair of skin flaps is only indicated in the newly made wound and can seldom be done with any degree of satisfaction on the firm tissues about the feet.

At the evening session Dr. A. T. Peters opened the exercises

with a long, very entertaining and practical talk on hog cholera. He was showered with many questions about the various angles of this great problem.

On motion of Dr. D. M. Campbell, seconded by about fifty members, Dr. A. Tyler of Elgin was summarily suspended from membership in the Association and the Secretary was instructed to summon him to appear before the Board of Censors to show cause why he should not be dismissed for issuing illegal certificates of health for cattle shipped out of the State.

The program was brought to a close with papers by Gillespie, Hassel, Alverson, Brownlee and Glendenning on "Treatments which have given me good results." These papers brought out a wealth of useful information.

Dr. D. M. Campbell then opened the question box, which had been filling up during the day, and found queries upon almost every phase of veterinary science. The questions were all well answered and, no doubt, to the full satisfaction of the querists.

The meeting was adjourned at 11 P. M. to meet at the Lexington Hotel, Chicago, on the three days following the meeting of the United States Live Stock Sanitary Association.

L. A. MERILLAT, Secretary.

#### MAINE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting of the M. V. M. A. was held in Belfast July 9, 1913.

The Board of Trade of Belfast, through its President, Dr. West, extended the use of its rooms to the Association. The meeting called to order by President Jervis at 8 o'clock. Those responding to the roll call were: Drs. J. B. Darling, C. F. Dwinal, H. N. Eames, R. E. Freeman, H. B. F. Jervis, A. Joly, W. H. Lynch, W. L. Mebane, E. E. Russell, I. L. Salley, H. L. Stevens, H. B. Wescott, W. L. West.

President appointed Drs. West, Eames and Lynch as a committee to draft a new schedule of fees, the same to be reported at the next meeting.

Dr. Salley read a very interesting paper on "Prescribing and Prescription Writing." It was discussed very freely by all those present.

A question box was inaugurated at this meeting and proved to be a success. It was voted to hold the next meeting at Waterville, October 8, 1913. The meeting adjourned at 11.45 P. M.

H. B. WESCOTT, Secretary.

## NEWS AND ITEMS.

---

### BREEDING ARMY REMOUNTS.\*

The Bureau of Animal Industry has received reports from its officers in charge of the breeding of army remounts in co-operation with the War Department, which show that the Government's plan is very popular with the owners of mares. At the close of business on August 16, 1913, 41 stallions were in service. These stallions have covered 1,452 mares during the season, an average of slightly over 35 mares per stallion. Twenty-seven of the stallions were five years old or over, and covered 1,097 mares, an average of a little over 40; ten were four-year-olds and covered 292 mares, an average of better than 29 per head; four were three-year-olds and covered 63 mares, an average of more than 15.

The number of mares covered in Vermont and New Hampshire was 241, an average of over 34 for seven stallions, including 3 four-year-olds, and one three-year-old; 583 mares were bred in Virginia, an average of over 31 for 18 stallions, including 4 four-year-olds and 3 three-year-olds; 208 mares were bred in West Virginia, an average of 52 for four stallions, including one four-year-old; 376 mares were bred in Kentucky, an average of better than 37 for ten stallions, including one four-year-old; in Tennessee, a mature stallion and a four-year-old covered 22 mares each.

The number of mares covered by mature stallions of different breeds were as follows: Three Morgans averaged 45 mares; ten Thoroughbreds averaged 38 mares; eight Standardbreds averaged 40 mares, and six Saddle stallions averaged 42 mares. All ages by breeds are as follows: Seven Morgans (including 3 four-year-olds and one three-year-old) averaged 34 mares; 15 Thoroughbreds (including 3 four-year-olds and two three-year-olds) averaged 32 mares; ten Standardbreds (including 2 four-year-olds) averaged 39 mares; and 9 Saddle stallions (including 2 four-year-olds and one three-year-old) averaged 37 mares.

In placing these stallions, care was taken to select communities in which there was a scarcity of good stallions. Therefore, the mares bred during the past season are, to a great extent, mares which would probably not have been bred in the absence of Government encouragement.

The number of mares bred in 1913 will be increased somewhat. In New England, breeding continues until October 1, and in Virginia the fall season is commonly used. Both conditions will operate to the advantage of the remount breeding work.

The Department is not able to draw any deductions as to the advantage of one breed above another. Local preferences were considered in placing stallions and no breeds placed in a community which were not wanted. Regardless of breed or locality, however, the desire of farmers to breed their horses to good-sized stallions is noticeable. In almost every case where stallions have had a comparatively good season, it is because they were somewhat undersized.

Congress has provided for the continuation of the remount breeding work during the current fiscal year, but no considerable extension will be possible and no new breeding districts will be organized at present.

#### TICKS INJURING CATTLE HIDES INTENDED FOR LEATHER.\*

DEPARTMENT OF AGRICULTURE FINDS THAT TANNERS CANNOT  
USE HIDES FROM TICK INFESTED DISTRICTS FOR CHROME  
LEATHER.

According to figures gathered by one of the veterinary inspectors of the Bureau of Animal Industry, the presence of the tick among the cattle of the south not only lessens the value of the cattle on the hoof, but causes the gradings of hides that have been infested with ticks as No. 4 quality.

The same hide, if free from tick marks, would grade No. 2. The difference in price between these two grades of hides is 3 cents per pound. As the hide of southern steers weighs about 42 pounds, the presence of the tick in the hide causes a loss in the hide alone more than \$1.26 per hide. Government specialists point out that the cost of tick eradication is only about 50 cents per head so that if the counties make a systematic campaign to eradicate the tick, the increase in value of the hide alone would pay for the cost of tick eradication and leave the farmer a net profit of about 76 cents per hide.

The hide situation is becoming rather serious. A prominent tanner in Pennsylvania states:

"For the class of leather we make we prefer southern hides for chrome on account of the close texture and fine grain, but on

\* Office of Information, U. S. Department of Agriculture.



account of the ticks we have had to practically stop purchasing southern hides."

This is particularly significant, as the demand for chrome leather is increasing so that the normal demand for southern hides will be still further decreased.

A large percentage of the chrome leather now produced is finished with the grain left on so that all imperfections and tick marks on the grain side show very plainly. In the old days when all the leather for uppers was made from bark-tanned stock, all leather was buffed and the grain was removed. For this leather tanners could use cheap hides that were covered with imperfections and tick marks and make fairly good leather. The situation to-day, as it has been explained, is very different, as the public is demanding more and more grained leathers for which large proportions of southern hides will not be available until the tick is eradicated.

Tennessee will probably be the first State to be entirely free from quarantine for ticks. It already has eradicated the tick in fifty-one counties, and all that now remain under quarantine are parts of Marion, Wayne, Hardeman, McNairy and Decatur counties, and all of Hardin, Henderson and Chester counties. It is hoped that by September 1st these counties will be free from ticks and the entire State out of quarantine.

According to the specialists of the Department of Agriculture, it has cost less than 50 cents per head to eradicate the tick in Tennessee, and the cattle owners as a result have gained not less than \$7 per head, thus adding to the value of their stock. There are some 500,000 cattle in the counties already free from ticks and the immediate benefit to these owners has been not less than \$3,500,000. The cost of tick eradication has been only \$250,000 so that the investment paid for itself nearly 14 times over in a very short time. This does not include the additional profits which come from the fact that now that the tick is eradicated more cattle can be raised on each farm and that the cultivated fields are made more productive by the increase of the amount of fertilizer now available.

#### INSPECTORS SENT TO FOREIGN COUNTRIES TO STUDY MEAT PRODUCTION AND SYSTEMS OF MEAT INSPECTION.

Washington, D. C.—As a result of a misunderstanding created by press dispatches announcing that Doctors A. D. Melvin and Edward C. Joss of the Bureau of Animal Industry have been

dispatched to South American countries and Australia to investigate meat production, the Secretary of the U. S. Department of Agriculture has received many letters from farmers and others protesting that the Department should encourage domestic production of meat instead of encouraging foreign shippers to bring their product into competition with the local product.

David F. Houston, Secretary of Agriculture, has replied to these letters that the primary object of sending these inspectors abroad is neither to encourage nor to discourage the export of meat to the United States, but to make certain that the Department of Agriculture understands fully the conditions under which meat offered for entry into the United States is produced, slaughtered, packed and shipped. The data gained by these foreign inspectors will be directly useful to the Government in seeing that meat offered for admission to the country conforms not only to the Meat Inspection Act, but also to the Food and Drugs Act, which has recently been held to have jurisdiction in interstate commerce over meat and meat food products. Armed with this information, the Department can co-operate effectively with the Secretary of the Treasury in keeping out of the United States all meat produced from diseased cattle, all meats slaughtered in unsanitary establishments or improperly refrigerated, packed and shipped and all meat products prepared under conditions that would not be permitted in the Federally inspected establishments of the United States.

The secondary object of the trip, as explained in the letter of instruction to these inspectors is to look into the general condition of the live stock industry in the foreign countries, the growth of that industry, the countries to which they are now exporting live stock and meat and the probability of future shipments into the United States. The inspectors also are required to study the transportation facilities possessed by these foreign packers and exporters of meat and meat products and to give particular attention to their method of refrigerating and storing.

This foreign inspection of meat has become very necessary, irrespective of changes in the tariff on meat, for the reason that since 1906 the total domestic production of cattle has been 30 per cent. below the actual demand. In other words, this means that the production of cattle has fallen off while the population has been increasing. The Department is trying to meet this domestic situation by carrying on extensive campaigns for the eradication of the tick, which more than anything else has prevented the southern states from supplying the normal yield of

meat stock. Similar campaigns are being waged against tuberculosis, foot and mouth diseases, scabies and other plagues which are reducing the cattle output of other sections. The Dairy Division, through field workers and demonstrators, is carrying on an extensive propaganda to induce farmers to replace scrub cattle with good meat breeds and to convince farmers of the importance of not selling their good cows for slaughter.

The work for tick eradication in single states of the south has increased the annual value of cattle output over \$2,000,000 for a few counties alone. It is hoped that when greater headway has been made against these plagues that the deficiency in cattle production will be overcome and an actual increase to meet the population secured. In the meanwhile, however, with the demand for meat greater than the domestic supply, it is only a question of time when economic law will cause foreign shippers to seek a market in the United States. The Department of Agriculture, therefore, considers it highly important to have full information about the actual condition of meat production in the countries most likely to ship to the United States in order that it may join with the Treasury Department in excluding all diseased, filthy and undesirable meat offered for entry.

---

**BUILDING UP A STOCK FARM.**—Professor E Merillat, formerly of the Chair of Anatomy and Physiology, Chicago Veterinary College, has resigned from that institution and is now engaged in building up a small stock farm at Orrville, Ohio, in connection with his brother, Professor L. A. Merillat, of the Chair of Surgery, C. V. C.

**UNITED STATES CIVIL SERVICE EXAMINATION FOR VETERINARIAN (MALE), SEPTEMBER 10, 1913.**—The United States Civil Service Commission invites attention to the examination for veterinarian scheduled to be held on September 10, 1913. Among the vacancies to be filled as a result of this examination, it is expected to fill one in the U. S. Quartermaster Corps, Philippine Islands, at \$1,200 per annum, unless it is found to be in the interest of the service to fill such vacancy by reinstatement, transfer or promotion. Persons who desire this examination should at once apply for Form 2 and the Manual of Examinations for the Fall of 1913, to the United States Civil Service Commission, Washington, D. C.

---

DEPARTMENT OF AGRICULTURE ADVISES THAT MILK BE  
PASTEURIZED AT LOW TEMPERATURES.\*

---

In order to determine the best way of pasteurizing milk so as to kill the disease germs and yet not give the milk a cooked flavor or lessen its nutritive value, the Department of Agriculture, through its Dairy Division, has been conducting a series of experiments, treating milk at different temperatures and for different lengths of time. According to the report on these experiments in Bulletin 166 of the Bureau of Animal Industry, when milk is pasteurized at 145 degrees F. for thirty minutes the chemical changes are so slight that it is unlikely that the protein (muscle building element) or the phosphates of lime and magnesia are rendered less digestible than they are in raw milk.

Moreover, from a bacteriological standpoint, pasteurizing at low temperatures is found to be more satisfactory than pasteurizing at high temperatures. According to Bulletins 126 and 161, where low temperatures are used the majority of bacteria that survive are lactic acid organisms which play an important part in the normal souring of milk. When milk is efficiently pasteurized at high temperatures, the bacteria which survive are largely of the putrefactive kinds, and milk so treated, if kept for any length of time, has a tendency to rot instead of sour. From the standpoint of economy, the technologist of the Dairy Division finds that pasteurizing at low temperatures calls for less heat. It is found that it takes about  $23\frac{1}{2}$  per cent. less heat to raise milk to the temperature of 145 degrees F. than to a temperature of 165 degrees F. A similar gain is saving of the ice needed, because it will require  $23\frac{1}{2}$  per cent more refrigeration to cool milk to the shipping point when it is pasteurized at the higher temperature. The Department, therefore, recommends that "When market milk is pasteurized it should be heated to about 145 degrees Fahr. and held at that temperature for 30 minutes."

**DEATH FROM HEMORRHAGES.**—Through the courtesy of State Veterinarian George R. White, of Nashville, Tenn., we are in receipt of a newspaper clipping, describing the death of Dr. Jesse C. Brown, a prominent veterinarian of that city, as a result of hemorrhage. The doctor had had a hemorrhage a week previously, but seemed to have recovered from it entirely; but succumbed to the second attack within five minutes from the time he was taken.

---

\* Office of Information, U. S. Department of Agriculture.

## A. V. M. A. CONVENTION NOTES.\*

---

THE OPENING SESSION OF THE FIFTIETH ANNIVERSARY MEETING OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION occurred at 10.30 A. M., September 1st, in the North and East Ball Rooms of the Hotel Astor, New York, with nearly six hundred in attendance, despite the fact that it was a holiday (Labor Day), in consequence of which many did not arrive until the next day. After President Mohler had formally declared the meeting open, he introduced the Hon. J. A. Goulden, U. S. Congressman from New York, who welcomed the association to the City in a splendid, pleasing address, which was responded to by Dr. W. Horace Hoskins, of Philadelphia. President Mohler then read a telegram from the Honorary President, Prof. A. Liautard, Paris, France, who was unable to attend the meeting, owing to a severe illness of his wife. Dr. Liautard also sent an address, which he was to have delivered at the meeting, and a letter to President Mohler, in which he requested that his address be read by Dr. Robert W. Ellis, of New York, whom he referred to as his "partner for years," his "old student," his "sincere friend." After the reading of Dr. Liautard's address, President Mohler delivered the president's annual address, which was a most excellent one, and very much enjoyed by his audience. The afternoon brought the section meetings to work. There was also a general session on Monday evening, which was addressed by the Hon. Martin Behrman, Mayor of New Orleans, who spoke of the advancements in agricultural and live-stock interests in the State of Louisiana, seeming well posted on the part that veterinary medicine plays in the advancement of that work, gave a most attractive description of the municipality of which he is the chief executive, and finally gave a very pressing invitation to the American Veterinary Medical Association to meet in New Orleans in 1914. Dr. W. H. Dalrymple, of Baton Rouge, La., a past-president of the association and an enthusiastic and faithful member for a great many years, seconded Mayor Behr-

---

\* Complete report in October number.



man's invitation, stating that the organization had met below Mason and Dixon's Line but once in the fifty years of its existence. The doctor pointed out the fact that in addition to the great attractions of the City of New Orleans that had been depicted by Mayor Behrman, and the great benefits to be derived by the association, and pleasure to its members by going to that wonderful old city, the association would be doing a missionary work by going there. "This body of men dropped down into that country," said Dr. Dalrymple, "would do an immense amount of good in impressing upon our people the significance of the title veterinarian."

---

SOME ASPECTS OF THE TUBERCULOSIS PROBLEM was the subject with which Dr. Mazyck P. Ravenel, of the University of Wisconsin, opened the Tuesday morning session. The address was one of the best heard in some time, and dealt emphatically with the relationship between human and bovine tuberculosis. In fact, Dr. Ravenel does not recognize two distinct types, but rather a difference in the morphology and virulency when existing in the two classes of subjects. He spoke of the greater susceptibility in subjects under one year, compared with those over that age. He stated that it was a regrettable fact that Koch had ever declared that the transmissibility from animal to man was the least doubtful; a statement which had only been partly corrected. He went on to show that even more cases existed from that source than was generally believed, as the public only recognizes tuberculosis in the person that dies from the pulmonary form of that disease, not taking into account the joint and gland cases. The address was extremely interesting and instructive.

---

TREASURER GEORGE R. WHITE'S REPORT shows a balance in bank to the credit of the American Veterinary Medical Association of \$3,162.23.

---

NEW ORLEANS IN 1914.—The point of the compass is straining toward New Orleans for the 1914 meeting; and unless some unforeseen atmospheric disturbance develops we predict that that will be the next meeting place of the A. V. M. A.

# VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
Alabama Veterinary Med. Ass'n.....	June 6-7, 1913.....	Birmingham.....	C. A. Cary, Auburn.
Alumni Ass'n, N. Y.-A. V. C.....	April, 1914.....	141 W. 54th St., New York, N. Y.	P. K. Nichols, Port Richmond, N. Y.
American V. M. Ass'n.....	Sept. 1-2-3-4-5, 1913.	Ft. Smith.....	C. J. Marshall, Philadelphia.
Arkansas Veterinary Ass'n.....	January, 1914.....		J. B. Arthur, Russellville.
Ass'n Médéciale Veterinaire Française. "Laval"	1st and 3d Thur. of each month.....	Lec. Room, Laval Un'y, Mon.	J. P. A. Houde, Montreal.
B. A. I. Vet. In. A., Chicago.....	2d Fri. each month.....	Chicago.....	H. A. Smith, Chicago, Ill.
B. A. I. Vet. In. A., So. Omaha.....	3d Mon. each month.....	St. Joseph and vicinity.....	E. J. Jackson, So. Omaha.
Buchanan Co. Vet. Ass'n.....	Monthly.....		
California State V. M. Ass'n.....	Sept. 24, 1913.....	San Francisco.....	F. W. Caldwell, St. Joseph, Mo.
Central Canada V. Ass'n.....	Feb. and July.....	Ottawa.....	John F. McKenna, Fresno.
Central N. Y. Vet. Med. Ass'n.....	June and Nov.....	Syracuse.....	A. E. James, Ottawa.
Chicago Veterinary Society.....	2d Tues. each month.....	Chicago.....	W. B. Switzer, Oswego.
Colorado State V. M. Ass'n.....	May 28-29, 1913.....	Ft. Collins.....	D. M. Campbell, Chicago.
Connecticut V. M. Ass'n.....	August 6, 1913.....	Waterbury.....	I. E. Newson, Ft. Collins.
Delaware State Vet. Society.....	Jan., Apl., July, Oct.....	Wilmington.....	B. K. Dow, Willimantic.
Essex Co. (N. J.) V. M. A.....	3d Mon. each month.....	Newark, N. J.....	A. S. Houchin, Newark, Del.
Genesee Valley V. M. Ass'n.....	2d week, July, 1913.....	Rochester.....	J. F. Carey, East Orange, N. J.
Georgia State V. M. A.....	Dec. 22-23, 1913.....	Atlanta.....	J. H. Taylor, Henrietta.
V. M. A. of Geo. Wash. Un'y.....	2d Sat. each month.....	Wash., D. C.....	P. F. Bahnsen, America.
Hamilton Co. (Ohio) V. A.....	December, 1913.....	Chicago.....	A. T. Ayers.
Illinois State V. M. Ass'n.....	Jan. 14, 1914.....	Indianapolis.....	Louis P. Cook, Cincinnati.
Indiana Veterinary Association.....	Pending.....		L. A. Merrill, Chicago.
Iowa Veterinary Ass'n.....	Pending.....		A. F. Nelson, Indianapolis.
Kansas State V. M. Ass'n.....	Pending.....		C. H. Stange, Ames.
Kentucky V. M. Ass'n.....	Oct. & Feb. each year.....	Lexington.....	J. H. Burt, Manhattan.
Keystone V. M. Ass'n.....	2d Tues. each month.....	Philadelphia.....	Robert Graham, Lexington.
Lake Erie V. M. Association.....	Pending.....		Cheston M. Hoskins.
Louisiana State V. M. Ass'n.....	Sept., 1913.....	Lake Charles.....	Phil. H. Fulstow, Norwalk, Ohio.
Maine Vet. Med. Ass'n.....	July 9, 1913.....	Belfast.....	Hamlet Moore, New Orleans, La.
Maryland State Vet. Society.....		Baltimore.....	H. B. Wescott, Portland.
Massachusetts Vet. Ass'n.....	4th Wed. each month.....	Young's, Boston.....	H. H. Counselman, Sec'y.
Michigan State V. M. Ass'n.....	Feb. 3, 4, 1914.....	Lansing.....	J. H. Seale, Salem.
Minnesota State V. M. Ass'n.....	July 9, 10, 1913.....	Albert Lea.....	W. A. Ewalt, Mt. Clemens.
Mississippi State V. M. Ass'n.....	Aug. 29, 1913.....	Starkville.....	G. Ed. Leech, Winona.
Missouri Valley V. Ass'n.....	June 30, July 1-2, '13.....	Omaha.....	Wm. P. Ferguson, Grenada.
Missouri Vet. Med. Ass'n.....	July, 1913.....	Kirkville.....	Hal. C. Simpson, Denison, Ia.
Montana State V. M. A.....	Sept. 24, 25, 1913.....	Helena.....	S. Stewart, Kansas City.
Nebraska V. M. Ass'n.....	1st Mo. & Tu., Dec. '13.....	Lincoln, Neb.....	A. D. Knowles, Livingston.
New York S. V. M. Soc'y.....	1st week Sept., 1913.....	New York.....	Carl J. Norden, Nebraska City.
North Carolina V. M. Ass'n.....	June, 1914.....	Wilson.....	H. J. Milks, Ithaca, N. Y.
North Dakota V. M. Ass'n.....	Aug. 6-7, 1913.....	Fargo.....	J. P. Spoon, Burlington.
North-Western Ohio V. M. A.....	Nov. 1913.....	Delphos.....	C. H. Babcock, New Rockford.
Ohio State V. M. Ass'n.....	Jan. 14, 15, 1914.....	Columbus.....	E. V. Hoyer, Delphos.
Ohio Soc. of Comparative Med.....	Annually.....	Upper Sandusky.....	Reuben Hilty, Toledo.
Ohio Valley Vet. Med. Ass'n.....			F. F. Sheets, Van Wert, Ohio.
Oklahoma V. M. Ass'n.....	Fall, 1913.....	Oklahoma City.....	J. C. Howard, Sullivan.
Ontario Vet. Ass'n.....	1st Week in Feb. 1914.....	Toronto.....	C. E. Steel, Oklahoma City.
Pennsylvania State V. M. A.....	Sept. 16, 1913.....	Not selected.....	L. A. Willson, Toronto.
Philippine V. M. A.....	Call of President.....	Manila.....	John Reichel, Glenolden.
Portland Vet. Med. Ass'n.....	4th Tues. each month.....	Portland, Ore.....	David C. Kretzer, Manila.
Province of Quebec V. M. A.....		Mon. and Que.....	Sam. B. Foster, Portland, Ore.
Rhode Island V. M. Ass'n.....	Jan. and June.....	Providence.....	Gustave Boyer, Rigaud, P. Q.
South Carolina Ass'n of Veter'ns.....	Pending.....		J. S. Pollard, Providence.
South Illinois V. M. and Surg. Ass'n.....	Aug. 5-6-7, 1913.....	Fillmore.....	B. K. McInnes, Charleston.
St. Louis Soc. of Vet. Inspectors.....	1st Wed. fol. the 2d Sun. each month.....	St. Louis.....	F. Hockman, Iowa.
Schuylkill Valley V. M. A.....	June 18, 1913.....	Reading.....	Wm. T. Conway, St. Louis, Mo.
Soc. Vet. Alumni Univ. Penn.....		Philadelphia.....	W. G. Huyett, Wernersville.
South Dakota V. M. A.....	Pending.....	Madison.....	B. T. Woodward, Wash'n, D. C.
Southern Auxiliary of California State V. M. Ass'n.....			S. W. Allen, Watertown.
South St. Joseph Ass'n of Vet. Insp.....	Jan., Apl., July, Oct.....	Los Angeles.....	J. A. Dell, Los Angeles.
Tennessee Vet. Med. Ass'n.....	4th Tues. each month.....	407 Illinois Ave. Memphis.....	H. R. Collins, South St. Joseph.
Texas V. M. Ass'n.....	November, 1913.....	College Station.....	O. L. McMahon, Columbia.
Twin City V. M. Ass'n.....	Nov., 1913.....	St. P.-Minneapolis.....	Allen J. Foster, Marshall.
Utah Vet. Med. Ass'n.....	2d Thu. each month.....		S. H. Ward, St. Paul, Minn.
Vermont Vet. Med. Ass'n.....	Pending.....		A. J. Webb, Layton.
Veterinary Ass'n of Alberta.....			G. T. Stevenson, Burlington.
Vet. Ass'n Dist. of Columbia.....	3d Wed. each month.....	514 9th St., N.W. Winnipeg.....	C. H. H. Sweetapple, For. Saskat- chewan, Alta., Can.
Vet. Ass'n of Manitoba.....	Feb. & July each yr.....		M. Page Smith, Washington, D. C.
Vet. Med. Ass'n of N. J.....	July 10, 1913.....	Jersey City.....	Wm. Hilton, Winnipeg.
V. M. Ass'n, New York City.....	1st Wed. each month.....	141 W. 54th St. Jersey City.....	E. L. Lobien, New Brunswick.
Veterinary Practitioners' Club.....	Monthly.....		R. S. MacKellar, N. Y. City.
Virginia State V. M. Ass'n.....	July 10, 1913.....	Old Point Comf't Pullman.....	A. F. Mount, Jersey City.
Washington State Col. V. M. A.....	1st & 3d Fri. Eve.....	Walla Walla.....	Geo. C. Faville, North Emporia.
Washington State V. M. A.....	June 1914.....	Pittsburgh.....	R. J. Donohue, Pullman.
Western Penn. V. M. Ass'n.....	3d Thu. each month.....	Milwaukee.....	Carl Cosier, Bellingham.
Wisconsin Soc. Vet. Grad.....	July 10-17, 1913.....	York.....	Benjamin Gunner, Sewickley.
York Co. (Pa.) V. M. A.....	June, Sept., Dec., Mar.....		J. W. Beckwith, Shalburg.
			E. S. Bausticker, York, Pa.

## PUBLISHERS' DEPARTMENT.

---

*Subscription price, \$3 per annum, invariably in advance; Canadian subscriptions, \$3.25; foreign countries, \$3.60; students while attending college, \$2; Students in Canada, \$2.25; single copies, 30 cents in U. S. Copy for advertisements should be received by 10th of month.*

*Rejected manuscripts will not be returned unless postage is forwarded.*

*Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. Make all checks or P. O. orders payable to American Veterinary Review.*

---

SEE THE IMPORTANT NOTICE on page 15 of the present issue of the REVIEW, issued by the H. K. Mulford Co., and your interest will be sufficiently aroused to prompt you to write that most excellent house for further literature. Mention the REVIEW when writing.

---

PUPPIES ARE NATURE BABIES, say the Bennett Biscuit Company in their attractive little advertisement on page 26 of this issue, and then proceed to describe the superior qualities of the Maltoid Milk-Bone. Further information on this excellent little biscuit will be cheerfully furnished if you will write the company, mentioning the REVIEW.

---

SEE THAT CUSHION are the significant words that call attention to a feature of the Air Cushion Pad, illustrated and described on page 14 (adv. dept.) of the present issue, that is peculiar to that particular pad; a feature that makes it the superior of any other rubber pad manufactured. A horse shod with this pad is *safe* on any pavement, and is free from pavement-soreness. In short, it is the ideal all-round pad, and if there are those who are not familiar with its superior qualities, they should get acquainted with it at once. See that cushion and learn for yourself what it stands for. (Mention the REVIEW in writing.)

# Haussmann & Dunn Co.'s AUTO-CAUTERY

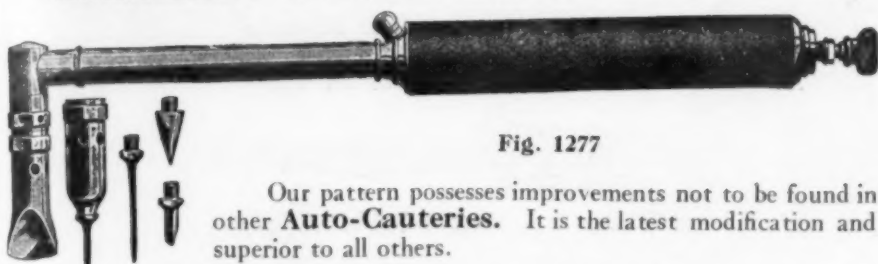


Fig. 1277

Our pattern possesses improvements not to be found in other **Auto-Cauteries**. It is the latest modification and superior to all others.

**Advantages.**—This instrument possesses many advantages over the usual forms of cauteries now in general use, the most important being its simplicity, ease of manipulation with one hand, and maintenance of temperature for nearly one hour, producing the maximum heating effect required for this mode of treatment. Full directions with each outfit.

WRITE FOR CATALOGUE

## PRICES

Complete in Cloth Roll with Alcohol Lamp and Wrench.....	\$15.00
With Ball Point Extra.....	16.50
Complete in Polished Wood Case with Alcohol Lamp, Wrench for Adjusting and 4-oz. G. S. M. C. Bottle for Ether.....	18.00
With Ball Point Extra.....	19.50

## HAUSSMANN & DUNN CO.

Veterinary Surgical Instruments  
Text Books and Supplies

708 S. Clark Street, Chicago.

"WHERE THERE IS PUS"

## Poly-Valent Bacterins

Successfully used in the treatment of abscesses, wire cuts, nail punctures, poll evil, fistulous withers, open joint, strangles, lymphangitis, cellulitis, septic arthritis, quilltor, etc.  
6 ampules (2 c.c. each) in package \$1.00

## Influenza Vaccine

A dependable product of proven value, used as an immunizing and curative agent in the treatment of influenza, shipping fever, yards fever, acclimation fever, and febrile diseases of bacterial origin in horses and mules.

6 ampules (2 c.c. each) in package \$1.00

### Distemper Serum (canine)

A valuable prophylactic and immunizing agent.  
10 c.c. ampule, \$1.00.

### Distemper Bacterins (canine)

Used as a curative agent in conjunction with the "Distemper Serum."  
6 ampules 2 c.c. each \$1.00.

N. B.—The complete treatment containing one 10 c.c. ampule of the Distemper Serum and 6 ampules of the Distemper Bacterins, \$2.00.

## Accuracy Laboratories

1714 and 1716 West Madison Street

Chicago, Ill.

Painstaking comparisons made repeatedly  
by the most famous veterinarians of  
the world have established the fact that—

## **Glyco-Heroin (Smith)**

is decidedly the most reliable remedy for

COUGH, BRONCHITIS, LARYNGITIS AND PNEUMONIA  
IN HORSES, CATTLE OR DOGS

Its action is more prompt than that of any  
other remedy, and no danger whatever attends  
its proper administration.

Glyco-Heroin (Smith) promptly checks  
cough, relieves suffocative breathing, liquefies  
bronchial and pulmonary exudations, allays  
fever, alleviates pain, overcomes nervousness  
and restores the appetite.

DOSE: For horses or cattle,  
one ounce every two or three  
hours. For dogs, from ten  
drops to one-half teaspoonful.

SUBSTITUTION. To insure entirely  
satisfactory results, it is necessary to em-  
phasize the name "Smith" when prescrib-  
ing, for many worthless imitations of Glyco-  
Heroin are dispensed by unscrupulous  
dealers.



**MARTIN H. SMITH COMPANY**  
NEW YORK, N. Y. U. S. A.



## HAVE A HAND IN RESERVE



With a rubber bulb cautery both hands are occupied. Save the annoyance of pumping. Guide the firing iron with one hand, leaving the other free.

### Dechery's Ether Cautery

Is the apparatus for the veterinarian who wishes to HAVE A HAND READY for emergency.

Dechery's Ether Cautery, in wood case, with 4 firing points, combination wrench and ether bottle, net \$18.00  
In canvas pouch and without ether bottle, net..... 15.00

Like all products having our trade-mark, Dechery's Ether Cautery may be had from your local dealer, or

**The Kny-Scheerer Co.**

Manufacturers of Veterinary Instruments of Quality  
404-410 West 27th Street New York



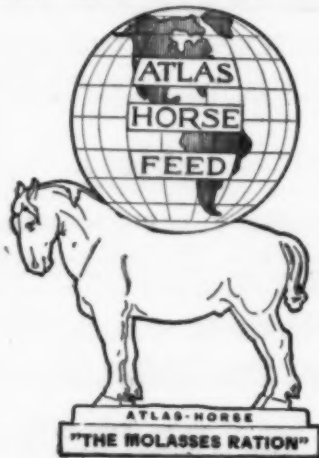
Trade-Mark

## ATLAS HORSE FEED

merits the veterinarian's thoughtful consideration.

### IT IS NOT

a medicine, nor a condimental food; neither does it contain any drugs or chemicals whatever, nor should it be confused with so called "patent feed."



### IT IS

a genuine molasses ration made on scientific principles and rich in pure Louisiana cane molasses. Highly nutritive, thoroughly digestible, and infinitely more convenient than mixing your own molasses feed.

*Full particulars furnished upon application to*

## The Meader-Atlas Co.

New York Office: 105 and 107 HUDSON STREET.

# A Reliable Prophylactic and Curative Agent for Canine Distemper

After years of experimental work in our Research Laboratories, we succeeded in isolating the germ of canine distemper—*bacillus bronchisepticus* (*bronchicanis*)—and from it prepared a true

## **CANINE DISTEMPER VACCINE**

which has elicited marked favor from veterinarians in all parts of the country.

We manufacture both curative and prophylactic preparations of **Canine Distemper Vaccine**. These vaccines have been exhaustively tested clinically. They have given unmistakable proof of therapeutic efficacy. We unhesitatingly commend them to the veterinary profession.

### **Bulbs.**

#### **CANINE DISTEMPER VACCINE (COMBINED), CURATIVE.**

Bio. 831. Packages of six bulbs of 1 Cc. each. Price per package, \$2.00.  
Doses 1, 2, 3, 4, 5 and 6, respectively, to be injected hypodermatically, in their order, at intervals of three to five days.

#### **CANINE DISTEMPER VACCINE, PROPHYLACTIC.**

Bio. 832. Packages of three bulbs of 1 Cc. each. Price per package, \$1.00.  
Doses 1, 2 and 3, respectively, to be injected hypodermatically, in their order, at intervals of three to five days.

### **Tablets.**

#### **CANINE DISTEMPER VACCINE (COMBINED), CURATIVE.**

Bio. 812. Tubes of 21 hypodermatic tablets. Price per package, \$2.00.  
First dose one tablet, second dose two tablets, third dose three tablets, increasing the dose by one tablet until the twenty-one tablets have been injected in six doses at intervals of three to five days.

#### **CANINE DISTEMPER VACCINE, PROPHYLACTIC.**

Bio. 811. Tubes of 6 hypodermatic tablets. Price per package, \$1.00.  
First dose one tablet, second dose two tablets, third dose three tablets, at intervals of three to five days.

NOTE.—The hypodermatic form of canine distemper vaccine permits the veterinarian to make for immediate use any strength of solution desired by dissolving the required number of tablets in 5 Cc. or less of sterile water.

WRITE FOR LITERATURE ON CANINE DISTEMPER VACCINE.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

# THE ONTARIO VETERINARY COLLEGE

CELEBRATES ITS 50TH ANNIVERSARY THIS YEAR.

An Entertainment to mark the occasion will be held in the Convocation Hall of the University on Thursday evening, April 10th, at 8 o'clock.

The Alumni of the College, as well as others interested in the welfare of Veterinary Science, are most cordially invited to be present.

## AZOLYSIN

A treatment for AZOTURIA based on the "Viscosity Theory" of Steffen and McCracken.

This is the second year in which this product has been used and the results in many instances have been nothing short of phenomenal.

It is essential that it be used early, at least treatment should be begun during the first six to twelve hours in the attack.

PRICE, \$5.00.

CASH WITH ORDER

**THE AZOLYSIN COMPANY, Inc.**

Sole Distributors

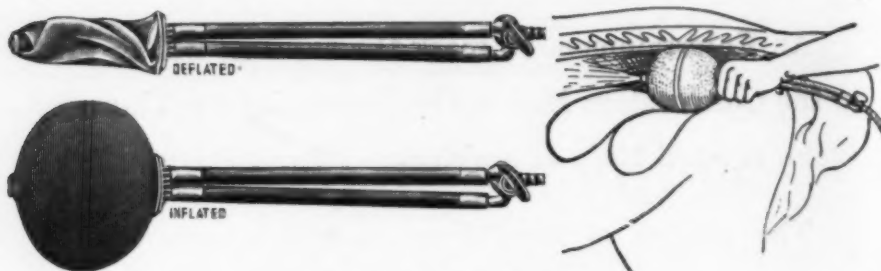
557 12th STREET,

MILWAUKEE, WIS.

# A PROVEN SUCCESS

## KELLOGG'S RECTUM LOCK SYRINGE

For Treating Colic, Locked Bowel, Impaction, Etc.



Patented in U. S. and Canada.

The only appliance of its kind in the market that will enable you to give Horses Rectal Injections and make them retain it for any length of time. By using this Syringe you can pump as much as 50 lbs. of water at once without the patient being able to expel it. By this method you can force the injection back into the colon where it will soften and break down hard faeces and the bowels will soon discharge all obstructions. It facilitates, increases and maintains the action of purgatives, destroys and removes worms infesting the large intestines, unloads the bowels in cases of azoturia, without exciting the patient. In short, the results attained from high colonic flushing in the human being may be secured in horses and cattle by means of this RECTUM LOCK SYRINGE.

### WHAT SOME OF ITS USERS SAY:

1818 Market St., San Francisco Cal., Nov. 22, 1913.

I can not recommend too highly the Dr. Kellogg Rectum Lock Syringe. It is the only Syringe I have ever heard to successfully administer the high enema.

(Signed) EDW. J. CREELY, Dean San Francisco Veterinary College.

One of the Syringes is in constant use in the Clinics of the San Francisco Veterinary College.

Chicago, Ill., Feb. 10, 1913.

This is to certify that I have used the Kellogg Rectum Lock Syringe in my practice for about a year with great satisfaction. It is especially useful in cases of obstinate constipation. I have injected as much as nine gallons of water at one injection in a large horse, and five gallons of water to seven gallons in smaller ones, and got relief in cases that would not yield to other treatment.

(Signed) A. W. BAKER, D. V. S., Professor of Theory and Practice, The Chicago Veterinary College.

Toronto, Ont., Canada, Feb. 8, 1913.

I have witnessed the demonstration of the Dr. Kellogg's Rectum Lock Syringe on a patient and believe it will be a useful instrument in giving relief to many conditions.

Yours very truly,

(Signed) W. J. R. FOWLER, V.S., B.V.Sc.,

Professor of Surgery and Anatomy, Ontario Veterinary College.

## SHARP & SMITH

Manufacturers and Importers of High Grade Surgical and Veterinary Instruments

103 N. WABASH AVE., CHICAGO, ILL.

Established 1844 Two Doors North of Washington St. Incorporated 1904

UNITED STATES  
CANADA  
MEXICO  
WEST INDIES

GREAT BRITAIN  
IRELAND  
AUSTRALIA  
NEW ZEALAND

HAWAII  
PHILIPPINES  
INDIA  
SOUTH AFRICA

# M·A·C

MISTURA

ARGENTI

COMPOSITA



## THE MODERN TREATMENT

FOR SPLINTS, SPAVINS, CURBS, SIDE BONES, RING-  
BONES, QUITTOR, SHOE BOILS, OSSIFICATIONS, IN-  
FLAMED TENDONS, BURSA LAMENESS, ETC.

## ADVANTAGES

CAN BE APPLIED IN A FEW SECONDS.  
DOES NOT SOIL THE HANDS AS IT IS APPLIED  
WITH THE BRUSH WHICH ACCOMPANIES EACH  
BOTTLE.  
DOES NOT BLEMISH THE HORSE NOR INTER-  
FERE IN ANY WAY WITH HIS DAILY WORK.  
MORE PROMPT THAN BLISTERS IN EVERY CASE.  
IN ACUTE OR SUB-ACUTE CASES, BETTER THAN  
FIRING.

**SOLD ONLY TO VETERINARIANS**

OR ON THEIR ORDER

MANUFACTURED AND  
FULLY PROTECTED BY

**CARTER-LUFF CHEM. CO. HUDSON, N.Y.**

## PRICES TO THE PROFESSION (DELIVERED)

SINGLE BOTTLE	- -	\$2.00	1/4 DOZEN	- -	\$5.00
1/2 DOZEN	- - -	\$8.00	ONE DOZEN	- -	\$15.00
TWO DOZEN	- -	\$25.00			

NO DISCOUNTS IF ORDERED OF DEALERS.

A DIVIDEND OF ONE BOTTLE FREE WITH EACH 1-4 DOZEN, TWO FREE WITH  
1-2 DOZEN, FOUR FREE WITH ONE DOZEN, AND EIGHT FREE WITH TWO DOZEN  
WILL BE GIVEN IF THE ORDER IS SENT DIRECT TO THE MANUFACTURERS

**CARTER-LUFF CHEM. CO. HUDSON, N. Y.**

(OVER)



Handling Horses made easy by using the Veterinarian's  
Favorite Ambulance.



**RECH-MARBAKER CO.,**

SPECIALISTS—DESIGNERS.

MAKERS OF HIGH GRADE AMBULANCES.

Girard Ave. and 8th St.,

PHILADELPHIA, PA.

*Send for information and catalogue.*

#### SERUMS:

Tetanic  
Streptococcic  
Distemper and Influenza  
Hog Cholera

#### VACCINES:


Anthrax  
Black Leg  
Hog Cholera

## ANTI-SUPPURINE

A polybacterial vaccine or bacterin for the treatment of Suppurating Conditions in Veterinary practice. Has been very extensively and successfully used since the spring of 1910.

In packages of 6 vials of 2 c. c., each, \$1.50; or \$15 per dozen packages.

In vials of 20 c. c., \$2; or \$20 per dozen.

 In liquid form ready for use.

## EUCAMPHINE

A compound of eucalyptus and camphor oils, cresylic acid, and saponaceous oils. Indications: Internally, whenever an antiseptic, antiperiodic, antiferment or antispasmodic is required. Externally, employed as a wash, douche, and dressing. High-class, agreeable and effective disinfectant and deodorant.

Pints,	\$ .50	Gallons,	\$3.00
5-pints,	\$2.00	2-gallons,	\$5.50
	5-gallons,		\$12.50

## GUAIALYPTOL

Eucamphine with Guaiacol. Indications:— All catarrhal affections of the respiratory and intestinal tracts, and notably for treatment of Laryngitis, Pharyngitis, Bronchitis, Oedema Glottidis, Influenza, Distemper, Strangles, Infectious Diarrhea, Septicemia, Gastric or Intestinal Flatulence, etc. It is also serviceable in Pneumonia.

Pints, \$ .75	5-pints, \$2.50	Gallons, \$4.00
---------------	-----------------	-----------------

 Ask for samples, and get acquainted with Eucamphine and Guaialyptol.

### THE SORBY VACCINE COMPANY

105 North Wabash Ave. (cor. Washington St.)

CHICAGO, ILL.

#### BACTERINS:

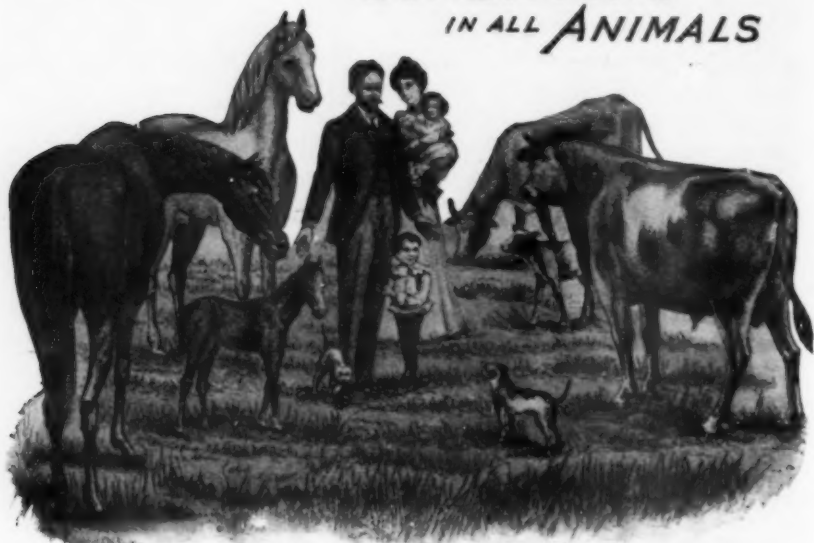
Anti-Suppurine  
Streptocine

#### DIAGNOSTICS

Mallein  
Tuberculin

# Sanmetto

FOR THE  
GENITO-URINARY  
CONDITIONS  
IN ALL ANIMALS



[The Tender-Hearted Veterinarian with Wife, Daughter and Little Son in the midst of his Patients that seem to reciprocate his kindness.]

A POSITIVE REMEDY  
—IN—  
**DISEASES OF THE GENITO-URINARY ORGANS**  
—OF—  
**THE HORSE AND DOG AS WELL AS MAN**

Doctor, when you have a Horse or Dog suffering from Kidney, Bladder or Urethral Trouble; or from any Irritation or Inflammation of the Urinary Tract; or from Impotency or Sterility,

**ORDER SANMETTO**

Sanmetto is largely used in Veterinary Practice for the above troubles and has been found Worthy and Reliable. It is also strongly endorsed and much used in AZOTURIA—many cases reported cured with it. Sanmetto acts as a vitalizing tonic to the Genito-Urinary Organs. It is eliminated from the System almost entirely through the Kidneys and Bladder—hence its soothing, healing and tonic power upon the entire Urinary Tract.

To avoid substitution, order thus: B, SANMETTO—one bottle—original package.

DOSE :—For Horse, one ounce three times a day. For Dog, one teaspoonful three times a day.

Price One Bottle, \$1.00. Case of One Dozen Bottles, \$8.00. Sold by all Reliable Druggists Pamphlet on application to **OD CHEM. CO., New York.**

# MODERN

## VETERINARY MEDICINES OF MERIT

**ANTITETANIC SERUM** (von Behring) in accordance with the standardization of U. S. Government, in aseptic glass syringes of 1500 and 3000 immunizing units.

**BOVOVACCINE,** Prof. von Behring's immunizing antitubercular substance. "I cannot too strongly recommend vaccination, according to von Behring's method, to dairymen and breeders wishing to build up and maintain healthy herds." C. M. B. . . . . D. V. S.

**DYMAL,** non-irritant, odorless, exsiccating, antiseptic powder; by diminishing wound secretion, it lessens danger of infection; specific in weeping eczema and burns.

**GALLOGEN,** a pure, intestinal astringent, indicated in scouring of road horses, enteritis, gastro-enteritis haemorrhagica, etc. "I have found it very efficacious in diarrhoea in canines even when found in connection with bloody discharge." J. A. McL. . . . . D. V. S.

**LAVISOL,** a powerful antiseptic and disinfectant, non-irritant, stable, non-toxic, clearly soluble in water, safer than carbolic acid or bichloride of mercury, and twice as effective.

**TUBERCULIN-**Behringwerk, in concentrated form or ready for use; also for use according to the intracutaneous test.

**VALIDOL,** valerianic acid menthylester, an analeptic and sedative, indicated in the nervous form of canine distemper, collapse and vomiting in dogs and cats.

**VIOFORM,** haemostatic antiseptic powder, takes place of Iodoform without its odor.

### CLINICAL THERMOMETERS HYPODERMIC SYRINGES

---

**C. BISCHOFF & CO. INC.,**  
451-453 Washington Street - - NEW YORK, N. Y.

## RELIABLE PREPARATIONS FOR THE VETERINARIAN

### CO. SOL. CRESOL.-MARTIN

(Contains 80% Pure Cresol)

A powerful concentrated antiseptic, antizymotic and germicide, when used in solutions of one-half to one per cent. strength. It forms a clear solution with all kinds of water, and is unsurpassed for all forms of surgical operations.

### CREOGEN-MARTIN

(The Veterinarians Antiseptic)

For many years this has been a standard pharmaceutical for the veterinary profession, and its wide range of usefulness in general practice has received the unqualified endorsement of the profession.

### CREOZOL-MARTIN

Prepared from standardized coal-tar creosote oil. Designed for dipping and disinfecting purposes in dealing with the diseases of livestock. Write for prices and full information on above preparations.

### MARTIN CHEMICAL CO.,

342-344 S. SCHUYLER AVE., KANKAKEE, ILLINOIS

# Veterinary Medicine

*Revised to Date. Standard and Worldwide in Comprehensiveness and Use*

By **JAMES LAW, F.R.C.V.S.**

*Ex-Director N. Y. S. Vet. Coll. Emeritus. 50 years Teaching and Practice*

*In 5 Vols. 8vo, 3277 pages*

- Vol. I.**—Respiratory and Circulatory. New chapters on Blood and Lymph. pp. 557, \$4, 3d Ed., 1910.
- Vol. II.**—Digestive, Hepatic, Tryptic. New chapters on Poisons, Ductless Glands, Hormones, Metabolism and Autointoxication. pp. 592, \$4, 3d Ed., 1911.
- Vol. III.**—Nervous, Genitourinary, Eye, Skin, Systemic. pp. 611, \$4, 3d Ed., 1911.
- Vol. IV.**—Microbian, Pestiferous, Prevention, Suppression, Exclusion, Micropathology, Serum Poisons, Serum Therapy, Immunization, etc. Scientific principles, general and specific. pp. 789, \$5, 3d Ed., 1912.
- Vol. V.**—Parasites and Parasitism. Scientific Extinction. pp. 564, \$4, 2d Ed., 1909.

*Vol. IV. has General Index of Vols. I. to IV. 3d Ed.*

Order today from the author, ITHACA, N. Y.

Carriage paid on receipt of price.





- V/1441. **The Queen City Continuous Flow Injection and Suction Pump.** This pump is the best pump made for stomach tube, as it can be used for injection or suction, and is continuous flow. It is made of heavy brass throughout, heavily nickel plated, no parts to rust or get out of order. 16 in. long. **Special Price.** pump only . . . . . \$3 50
- V/1442. **Queen City Pump,** with six feet heavy, white, non-collapsible tubing and wood nozzle. **Special Price** . . . . . 5 00
- V/1443. **Queen City Pump,** with Woche's 10-foot maroon rubber Stomach Tube and Stilet. **Special** . . . . . 7 50

We carry a complete line of Auto-Cauteries, Roaring Instruments and many new designs of other instruments. Submit your wants to us.

*Complete Veterinary Catalogue sent Free upon request.*

## THE MAX WOCHER & SON CO.,

Manufacturers of High Grade Veterinary Instruments and Hospital Supplies.

19-21-23 6th AVE. WEST :: :: CINCINNATI, OHIO.

You will not be disappointed in the use of

# OUR ANTI-INFLUENZA VACCINE

Which has proved its efficiency in the prevention and cure of

## Influenza, Strangles and Shipping Fever

This VACCINE is of highest potency, is permanent, easily administered, and of moderate cost.

An **Ideal Preparation** for this important and widespread group of diseases, in its use you do not share in an experiment.

PRICE—Single Dose \$0.50; Four Doses \$1.50; Twelve Doses \$4.00

(Special quotations given for large quantities.)

## Beebe Biological Laboratories

(DR. W. L. BEEBE, Director)

ST. PAUL, MINN.

## COLLEGE TEXT BOOKS

"LEADERS—ALL OF THEM"

FREIDBERGER & FROHNER. Veterinary Pathology,	\$8.00
HOBDAY. Surgical Diseases of the Dog and Cat, . . .	3.25
PATON. Physiology for Veterinary Students, . . .	3.00
KITT. Text Book of Comparative Veterinary Pathology,	4.00
JOWETT. Blood Serum Therapy, Preventive Inoculation and Toxins and Serum Diagnosis, . . . . .	1.75

### Our 1912 Catalogue of Veterinary Books

is now ready and is the most complete list of books on this subject ever issued. A copy will be sent FREE upon application.

In addition to our own publications, we carry the books of all of the other publishers. Upon receipt of the advertised price, all orders shipped promptly and *express charges prepaid*.

### CHICAGO MEDICAL BOOK COMPANY

Honore and Congress Streets, - - - - - CHICAGO

*Purchasers of the Veterinary Business of W. T. Keener & Co.*

## Air-Cushion Rubber Pads

Rubber  
horse-Shoe

IDEALISM IN HORSE-SHOEING.  
It follows closely nature's scheme  
in anatomy and physiology, and is  
therefore correct.



Many horses that are lame on  
any other pad or shoe will go sound  
on Air-Cushion Pads:  
There is a reason. "Write us."

Don't be deceived by inferior substitutes.

REVERE RUBBER CO., (Sole Mfrs.) Boston, New York, Pittsburg,  
Chicago, New Orleans.

# TUMENOL-AMMONIUM

Is widely used abroad in the treatment of such diseases as Eczema Erythematosum, Vesiculosum, Madidans, Crustosum and Squamosum, in Dermatitis Ulcerosa and Verrucosa, in Otitis Externa, and as a dressing for wounds.

## Novocain and L-Suprarenin-Synthetic

Hypodermic Tablets.

A Local Anesthetic Seven Times less Toxic than Cocain.

## ORTHOFORM

An Ideal Anesthetic for Use on Broken Surfaces.

Literature and Samples on Request.

## FARBWERKE-HOECHST COMPANY

Successors to VICTOR KOEHL & CO.

H. A. METZ, Pres.

34 BEACH STREET, NEW YORK

**BISMO-NITROX** for the immediate correction of gastric flatulent conditions generally described as Acute Gastric Colic. Relief usually within thirty minutes to one hour, at an average cost to the Veterinarian of 12½ cents. THIS IS ACUTE GASTRIC COLIC TIME.

**NITR-O-SALT** for the speedy cure of all curable stubborn, virulent, slow-healing and septic conditions. In throat and eye lesions and in nasal gleet the use of the Nitr-O-Salt, in solution, is a most valuable agent. FOR THE WOUND THAT HAS NOT HEALED.

### PRICES:

Bismo-Nitrox and Nitr-O-Salt to Veterinarians, \$2.00 per pound. Express Extra.

**Nitrox Chemical Co.,**

511 N. Garrison Ave., - St. Louis, Mo.

## Two Important Books

### Winslow's 1913 **Materia Medica and Therapeutics**

Chapters on serum diagnosis, vaccine therapy, poisons and their antidotes, the use of all medicinal agents—and Dr. Winslow's extensive changes and additions—make the 1913 edition (published this month) of Winslow's "Veterinary Materia Medica and Therapeutics" a wholly new book through which other Materia's become virtually obsolete.

Have this Materia and you will need no other. It is the complete treatise. In its successive editions since 1901 it has been the textbook of all Colleges and the highest authority consulted by practitioners.

### Dollar's **Regional Surgery and Operative Technique**

John Dollar, President of the Royal College, is England's most eminent veterinary authority.

The well-known "Regional Veterinary Surgery" and "Operative Technique" are his books. He has now fused them into one big volume offered at much lower price, yet containing the same delineation of the elementary and fine points of surgery, revised throughout and enlarged to all recent developments in this Science, including interesting cases.

1115 pages of condensed specifications so clearly stated that *through them you cannot be unsuccessful in any known veterinary operation.*

**These Books Constitute Veterinary Science—**  
For they present all therapeutics and all surgical information necessary to a successful practice.  
**Postcard us for sample pages and contents.**

**William R. Jenkins Co.**

**Publishers**

**6th Ave. at 48th St.,**

**New York City**

### JANUARY 1912 NUMBERS WANTED.

Owing to a large increase in subscriptions beginning with the Jan. and Feb. 1912 Number, that issue has become about exhausted. Any one having that number, who is willing to part with it, kindly communicate with the Review Office. We will pay the full price for as many as we require.

### VETERINARY LOCATIONS:

Veterinary locations and practices handled in all states. Drug stores for sale and positions in drug stores. Nurses, physicians, dentists, furnished and located for practices. F. V. Kniest, R. P., No. 505 Bee Bldg., Omaha, Nebraska. Established 1904.

### GOOD LOCATION AWAITS GRADUATE VETERINARIAN.

A graduate veterinarian can find a fine location where a practice will average at least \$2,000 the first year. In a city of 28,000 inhabitants; exceedingly good agricultural country to draw from. Nearest veterinary competition 140 miles away. For further information write to Box 593, Monroe, La.

### BRICK HOSPITAL FOR SALE—PRACTICE TO BUYER.

For Sale: Up to date new brick hospital, seven years' old practice in Southern State. Population 100,000. Will give the practice to the buyer of the building at sacrifice price and easy terms if taken at once. Address G. M., care of American Veterinary Review, 509 W. 152d Street, New York, N. Y.

WE DESIRE TO CALL TO YOUR NOTICE

## VACCINE EQUINA-LINTZ

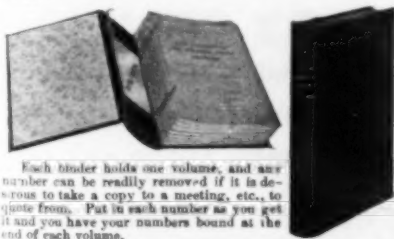
An absolutely specific vaccine for the treatment of  
**EQUINE DISTEMPER** or **SHIPPING FEVER**  
and sequela

**THE COMPARATIVE VACCINE LABORATORIES, INC.**

214 Livingston Street, Brooklyn, N. Y.

### THE "BIG BEN" BINDER

The binding of magazines in this binder is as easy as filling papers. No punching of holes is necessary. The bound matter opens flat to any page, even more so than a regularly bound book.



Each binder holds one volume, and any number can be readily removed if it is desirable to take a copy to a meeting, etc., to quote from. Put in each number as you get it and you have your numbers bound at the end of each volume.

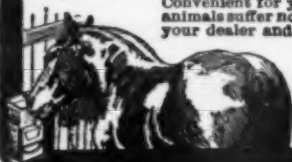
CLOTH WITH GOLD LETTERING, PRICE, \$1.00  
Address **AMERICAN VETERINARY REVIEW**  
509 WEST 152d ST., NEW YORK, N. Y.

## Just Enough

and just as they want it. The right way to salt animals is to let them help themselves.

### Compressed Pure-Salt Bricks

In our Patent Feeders, supply refined dairy salt. They mean animal thrift. They cost but little. Convenient for you and your animals suffer no neglect. Ask your dealer and write us for booklet.



**Belmont  
Stable  
Supply Co.**  
Patented, Mfrs.  
Brooklyn,  
N. Y.



# INDIANA VETERINARY COLLEGE

CONFERS THE DEGREE OF  
DOCTOR OF VETERINARY MEDICINE

Write for Catalogue

804 E. Market St.      Indianapolis, Indiana

---

**NEW YORK STATE VETERINARY COLLEGE,**  
ESTABLISHED AT  
**CORNELL UNIVERSITY, ITHACA, N. Y.**  
BY CHAPTER 153, LAWS OF 1894.

This college is well equipped with modern facilities for scientific and practical instructions for undergraduates and post-graduates. Most varied practice for students in the free clinics. Regular graded course, three years of nine months each. Entrance by Regents' "Veterinary Student Certificate," or by examination, September 12th, 1912. Matriculation September 22d, 1912.

✻ ✻ ✻ Tuition Free to New York State Students.

For extended announcement address,

Professor VERANUS A. MOORE, Director.

---

**NEW YORK UNIVERSITY.**

## New York-American Veterinary College.

(New York College of Veterinary Surgeons, chartered 1857, and the American Veterinary College, chartered 1875.)

Session 1912-1913 began September 26, 1912.

Write for New Catalogue and all information to

**W. J. COATES, M.D., D.V.S., DEAN,**

141 West 54th Street,

New York City.

---

## CHICAGO VETERINARY COLLEGE

2533, 2535, 2537 and 2539 State Street, Chicago, Ills.

Organized and Incorporated under the Laws of the State of Illinois, 1883.

Regular Session commences on or about September 15th in each year.

For Prospectus giving all information as to curriculum, fees, etc., address the President

JOSEPH HUGHES, M.R.C.V.S.,

2537 and 2539 State St., Chicago, Ills.

## THEY WORK FINE TOGETHER: POLY-BACTERINS AND NUCLEIN

They operate hand in hand—these two therapeutic agents.

In their action they are synergistic, combining to assist nature effectively in warding off disease organisms and in overcoming them when already established. They make a sturdy therapeutic pair which you will do well to employ in your practice.

### THIS IS HOW THEY CO-OPERATE

#### POLY-BACTERINS

1. Increases the opsonins in the blood.
2. Makes bacteria more easily destroyed by the phagocytes.
3. Stimulates the organism to recuperate.

#### NUCLEIN

1. Increases the number of phagocytes in the blood.
2. Re-inforces the army of bacteria-destroyers.
3. Greatly increases the body resistance.

In many cases either one, alone, is sufficient, but in some both remedies are necessary if a recovery is to be secured. and in *all* cases results will be quicker and surer where both are employed conjointly.

Poly-Bacterins: per dozen boxes, 6 ampules each	\$15.00
Less than one-half dozen quantities, per box	1.50
Nuclein Solution: per dozen 4-oz. bottles	10.00
In less than half-dozen quantities, per bottle	1.00
Per dozen pints	35.00
In less than half-dozen quantities, per pint	3.50

**THE ABBOTT ALKALOIDAL COMPANY**  
RAVENSWOOD, CHICAGO

**PULMONARY EMPHYSEMA, "BROKEN WIND,"  
"HEAVES," and all Bronchial Affections  
successfully treated with**

## VERGOTININE

"A precious therapeutic product."

—Dr. Gambarotta, Royal Vet. School, Turin.

"The only product capable of ameliorating and curing that disease."—Dr. Bernaud, Chief Vet., Compagnie des Voitures Parisiennes l'Urbaine, Paris.

"An energetic reconstituent . . . and dynamic tonic."—Dr. H. Perrin, Chief Military Veterinarian.

**VERGOTININE** has been used very successfully in America for several years in the treatment of the above referred to conditions by a large number of veterinarians. Further particulars furnished on request.

Sole Distributors for United States, Canada and Mexico

**PASTEUR LABORATORIES OF AMERICA**

New York: 366-368 West 11th St. Chicago: 443-445 So. Dearborn St.

# AMERICAN VETERINARY REVIEW.

A CORPS OF  
DISTINGUISHED  
COLLABORATORS

INCORPORATED  
A JOURNAL OF VETERINARY PROGRESS.

UNSURPASSED  
AS AN  
ADVERTISING  
MEDIUM.

EDITED BY  
A. Liantard, M.D.V.M. R.W. Ellis, D.V.S.  
509 WEST 152<sup>d</sup> STREET, NEW YORK.

Subscription Price, \$3.00 per annum, Invariably in Advance ; Students, \$2.00 ;  
Single Copies, 25 cents.

## ADVERTISING RATES.

	1 Year.	6 Months.	3 Months.	1 Month.
Whole Page, - -	\$100.00	\$60.00	\$33.00	\$12.00
Half Page, - -	65.00	40.00	22.00	8.00
Quarter Page, - -	40.00	25.00	15.00	6.00
Eighth Page, - -	25.00	15.00	9.00	4.00

Preferred pages extra, and must be secured in advance. The best medium through which to reach the largest number of veterinarians of this and other countries. The oldest and most widely-circulated veterinary publication in America. Address ROBT. W. ELLIS, Business Manager.  
509 West 152d Street, New York City.

# TALLIANINE

TRADE MARK REGISTERED.

Administered by intravenous injections through the jugular vein and has been demonstrated to be the most rational and positive treatment for

PNEUMONIA of all forms and at all stages,  
PURPURA HEMORRHAGICA, PULMONARY CONGESTION,  
TYPHOID FEVER and allied diseases,  
INFLUENZA, SEPTICAEMIA, PYAEMIA and  
all septic conditions,  
DISTEMPER, SHIPPING FEVER, SUNSTROKE and  
HEAT EXHAUSTION.

Excellent results have also been obtained by its use in the treatment of Laryngitis, Thermic Fever, Pleurisy, Septic Metritis, Nephritis, Infectious Fever and Wet Eczema.

---

A TRIAL WILL CONVINCE THE MOST SKEPTICAL.

---

To be ordered from all druggists and veterinary supply dealers  
or from the sole agents.

**WALTER F. SYKES & CO.,**  
**85 WATER STREET, NEW YORK.**

132 Chestnut St., PHILADELPHIA, PA. 113 Broad St., BOSTON, MASS.

WESTERN AGENTS

R. R. STREET & CO., 184 Washington Street, CHICAGO, ILLS.

DESCRIPTIVE MATTER SENT UPON REQUEST.

# PETROGEN—WYETH

---

A non-irritating, highly penetrating and soluble medium for the administration of medicaments which ordinarily prove difficult of use because of their irritating properties.

**Petrogen** is particularly well adapted for veterinary practice for the administration of iodine.

**Iodine-Petrogen** will cause no irritation or blistering, nor will its continued application result in a falling out of the hair, or cause any permanent staining.

**Iodine-Petrogen** is indicated in all forms of sprains, stiff joints, shoulder lameness, swellings, bone enlargements, and all conditions where a stimulating action on the glands and blood-vessels is required.

**Iodine-Petrogen** may be employed freely and indefinitely without producing the tendency to blister, which so often precludes entirely the use of the tincture of iodine.

---

LITERATURE AND SAMPLES OF IODINE-PETROGEN, OR OTHER PETROGEN COMBINATIONS, WILL BE SUPPLIED ON REQUEST

---

JOHN WYETH & BROTHER, Inc.

PHARMACEUTICAL CHEMISTS,

PHILADELPHIA



# THE MARK: "NORWICH"

Applied to remedies used in human and veterinary practice, carries with it the guarantee of excellence based on more than a quarter-century of successful manufacture and development of high-grade pharmaceuticals. This applies to our complete line of assayed fluid-extracts, tinctures, hypodermics, ointments, boluses, tablets, etc., as well as to our specialties.

## "A-V-C" BLISTER

Made from fresh, pure materials, according to the formula of the American Veterinary College, this gives results away ahead of mercuric iodide and cantharides preparations. Our facilities for manufacture enable us to offer this superior product at a low cost.

## VETRINOL POWDER

An ideal antiseptic and astringent dusting powder, approved by veterinarians as a superior dry dressing in burns, sores, cuts, wounds and other affections of the skin. It heals rapidly without causing irritation. Furnished in convenient sprinkler boxes.

## THE NORWICH PHARMACAL CO.

Laboratories and Main Offices: Norwich, New York

New York City Branch: 60 Beekman St., Corner Gold

Telephones: Beekman 3910 and 3911

Chicago Branch: 1100-1108 W. 37th St.

Kansas City Branch: 1424 Walnut St.

## SIMPLICITY EQUINE OPERATING TABLE



Has all movements necessary for all surgical operations.

The base rests on circular bearings enabling the operator to rotate the field of operation to the light.

By shifting a single lever, the table can be inverted, placing the patient in

position for inferiorly located operations, such as Umbilical Hernia, Scrotal Hernia, etc.

**Veterinary Specialty Manufacturing Co., Grand Rapids, Mich.**



For delicate Toy Breeds there is nothing to equal

## SPRATT'S "PET" "TOY PET" or "MIDGET" BISCUITS

None Genuine unless stamped with a X.

Send stamp for "Dog Culture." It contains valuable information and a full list of the innumerable foods, etc., manufactured by

### SPRATT'S PATENT LIMITED

Manufacturers of "SPRATT'S DOG CAKES."

Factory and Chief Offices at NEWARK, N. J. Depots at San Francisco, Cal., St. Louis, Mo., Cleveland, Ohio, Montreal, Can. Res. Supt. at Chicago, Ill. New England Agency, Boston, Mass. Factories also in London, England, and Berlin, Germany.

# THE OHIO STATE UNIVERSITY

## COLLEGE OF VETERINARY MEDICINE

Columbus, O.

Offers a three year graded course leading to the degree of Doctor of Veterinary Medicine. Unexcelled laboratory and clinical facilities. New buildings especially designed for teaching veterinary medicine according to the most approved modern methods. Faculty of specialists devoting whole time to teaching. For College Bulletins address **DAVID S. WHITE, Dean.**

---

## THE GEORGE WASHINGTON UNIVERSITY

### College of Veterinary Medicine, Washington, D. C.

---

Offers a graded four year course leading to the degree of Doctor of Veterinary Medicine (D.V. M.), beginning with the session 1912-13

This course is designed for well educated young men employed in the government service or elsewhere during the day. Lectures begin at 5. P. M.

School recognized by American Veterinary Medical Association, U. S. Civil Service Commission, U. S. Bureau of Animal Industry and State Examining Boards.

Clinics, hospitals, military posts, government laboratories and experiment stations located at the National Capital give students superior advantages in acquiring a broad education in veterinary science. For catalog, address

**DAVID E. BUCKINGHAM, V. M. D.**

Dean of Veterinary Faculty,

2113-15 FOURTEENTH ST., N. W.

---

## The Kansas City Veterinary College,

---

N. W. Corner 15th St. and Lydia Ave.

Kansas City, - - - Missouri.

A three year graded course. Daily clinical instruction. Excellent laboratory equipment. Graduates are eligible to membership in the American Veterinary Medical Association, also eligible to appointment as U. S. Veterinary Inspectors and as U. S. Army Veterinarians. . . .

**FOR CATALOGUE, ADDRESS**

**.... S. STEWART, Dean.**

---

## UNIVERSITY OF PENNSYLVANIA.

### SCHOOL OF VETERINARY MEDICINE.

---

*The course of instruction is graded and extends over three years, with one session beginning the 4th Friday in September, and ending the 3d Wednesday in June in each year.*

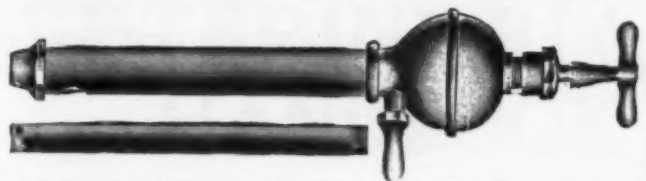
Practical Instruction, including Laboratory Work in Pharmacy, Chemistry, General Biology, Histology, Physiology, Comparative Osteology, Dissecting, Botany, Pathology, Bacteriology, and Inspection of Meat and Milk, with personal care and treatment of animals in the hospitals and clinics, is a part of the regular course without additional expense.

Graduates of this school are eligible for membership in the American Veterinary Medical Association.

For Catalogue. Address **LOUIS A. KLEIN, V.M.D.,** Dean of Veterinary Faculty,

Dept. F, Cor. 39th St. and Woodland Ave., Philadelphia.

## THE SIMPLEX CONTINUOUS FLOW PUMP



Is made of solid brass and nicely nickel plated. It is an actual continuous flow pump, simple

of construction and easy acting. Gives perfect satisfaction wherever used. Price \$5.25.

### Heavy Brass Dose Syringes

Nickel plated, 2 oz. size, with 2 pipes. \$1.00 each; half dozen, \$5.50; dozen, \$10.00.



New Standard Veterinary Thermometer, with ring to hold cord. Same as recommended by the B. A. I. Price 60c. each; dozen, \$6.00.

**FRANK S. BETZ CO., Hammond, Ind.**

*The Largest Manufacturer in the World of Veterinary, Surgical and Dental Instruments and Supplies. Write for Catalog.*

ESTABLISHED 1851.

INCORPORATED 1897

## EIMER & AMEND, WHOLESALE DRUGGISTS,

205, 207, 209 and 211 THIRD AVENUE,

NEW YORK CITY

MAKE A SPECIALTY OF ALL

**Drugs, Extracts, Tinctures, Chemicals,  
Etc., Etc., Used in Veterinary Practice.**

**E. and A.'s VETERINARY GLYCERIN SUPPOSITORIES.**

**SULFGLYCEROLE FOR SKIN LESIONS.**

**SULFGLYCEROLE OINT. FOR SCRATCHES.**

SOLE AGENTS FOR

**H. HAUPTNER, BERLIN, GERMANY,  
VETERINARY INSTRUMENTS.**

Write for Catalogue !!!

# PASTEUR LABORATORIES

OF AMERICA  
BIOLOGICAL PRODUCTS

NEW YORK 366 368 WEST 117<sup>th</sup> ST.

SAN FRANCISCO

CHICAGO 443 S. DEARBORN ST.

We are the sole concessionaires of the original and only genuine Pasteur's Anthrax Vaccine discovered by Profs. Pasteur, Chamberland and Roux.

For the prevention of Anthrax or Charbon in horses, mules, cattle, sheep and goats. Introduced by us into this country in 1895 and successfully used by veterinarians on over 40,000,000 animals.

## Antistrangles Serum

For the prevention and cure of true strangles in horses.

## Antistreptococcic Serum (Veterinary)

Indicated in all conditions due to streptococcus infection; notably Influenza, Distemper, Shipping Fever, Purpura, Hemorrhagica or Equine Anasarca. Furnished in liquid and dry form, the latter keeping indefinitely.

## Antitetanic Serum (Veterinary)

The most reliable cure for Tetanus and an infallible preventive of that disease. Furnished in liquid and dry form, the latter keeping indefinitely.

## Mallein and Mallein Solution

For the diagnosis of Glanders in horses and mules. Mallein Solution is ready for use and is furnished in one, two and five-dose packages.

## Tuberculin and Tuberculin Solution

For the diagnosis of Tuberculosis. Tuberculin Solution is ready for use as sold and is furnished in one, two and five-dose packages.

## Antivenomous Serum

Exerts a specific action against the venom of all species of poisonous reptiles. In dry and liquid form.

## Blackleg Vaccine, Powder Form

## Blackleg Vaccine, Cord Form

## Blackleg Vaccine, Pellet Form

We are the sole concessionaires of the original and only genuine Blackleg Vaccine for the prevention of Blackleg in Cattle.

Produced exclusively for us by the discoverers, Professors Arloing, Cornevin and Thomas' heritiers. Furnished in the powder, cord, and pellet form and the single and double treatment. The latter should be used whenever possible and invariably upon pure-bred, highly-graded, or valuable stock. Successfully used by veterinarians on over 36,000,000 head.

## Canine Distemper Serum

Principally a curative agent for Canine Distemper. It also confers a limited immunity.

## Polyvalent Calf Dysentery Serum.

## Hog Cholera Serum.

## Eucamphol

An ideal Antiseptic, Disinfectant and Germicide. It is a compound of Eucalyptus Oil, Camphor Oil and Cresol, and is indicated in daily practice.

## Lincoln Disinfectant

For general and extensive disinfecting; compares favorably with any general disinfectant on the market.

## Traumatol (Iodocresine)

A powerfully Antiseptic, Cicatrisant and non-toxic Microbicide. Furnished in Solution, Powder and Vaseline.

## Pasteur Laboratories Rat Virus

For the scientific destruction of rats, mice and moles. Harmless to human beings, domestic animals, birds, etc.

# VETERINARIAN'S HANDBOOK

OF

## Materia Medica and Therapeutics

BY

**D. H. UDALL, B.S.A., D.V.M.**

Professor of Veterinary Medicine and Hygiene, New York State  
Veterinary College at Cornell University, Ithaca, N. Y.

### Table of Contents

	PAGE		PAGE
Weights and Measures.....	1	Administration of Medicine...	146
Table of Solubilities.....	4	Tables, obstetrical.....	149
Representative Formulas.....	9	Tables, age.....	152
Descriptions, Uses and Dosage of Drugs.....	11	Tables, pulse, respiration and temperature.....	156
Treatment of Diseases.....	95	Veterinary Hygiene.....	158
Symptoms and Treatment of Poisoning.....	141	Clinical Diagnosis.....	167
		Shipment of Tissues.....	178

After looking through this little "gem" I consider it the most up-to-date, compact, and complete book on this subject.

A. BOSTROM,  
Deputy State Veterinarian, Nebraska.

It is a book which every veterinarian ought to have, because it meets a need which was not satisfied by any other English publication that I know of.

C. M. HARING,  
University of California.

I doubt if there is another book published that will be used by the practitioner as much as this one.

GEORGE H. GLOVER,  
Colorado State Agricultural College,  
Fort Collins, Col.

I have very carefully perused its contents and found it to be full, yet compact, of the every-day knowledge needed by students and busy practitioners.

V. G. KIMBALL,  
University of Pennsylvania, Philadelphia.

This is truly a condensed encyclopaedia on veterinary topics. A work that is sure to be useful to the busy practitioner and student as a daily reference for those even with a faultless memory.

J. F. DEVINE,  
Orange County Veterinary Hospital,  
Goshen, N. Y.

It will fill a long felt want as something of this kind is always a ready reference book and it contains a world of useful information.

CHAS. H. JEWELL,  
Fort Sill, Okla.

**178 Pages, Flexible Leather Covers. \$1.50 Net, Post Paid**

**CARPENTER & CO.**

**Publishers**

**Ithaca, N. Y.**



## RESTRAINT OF DOMESTIC ANIMALS.

### A Book for Students and Practitioners

By GEORGE R. WHITE, M. D., D. V. S., Nashville, Tenn.

Over 300 pages, with 332 illustrations made from drawings by one of the best pen artists in the United States. It illustrates and fully describes every known means of **RESTRAINT** of the Horse, Ox, Dog and Hog. This is by far the **best illustrated book** ever written in America on any branch of Veterinary Science. Published by the Author. For sale by all veterinary booksellers. Sent post or express prepaid to any address upon receipt of price.

"**Restraint of Domestic Animals**" has already been adopted as a Text Book in 18 of the 21 Veterinary Colleges of America. Its sale has been phenomenal.

Every practitioner should secure a copy for study and reference. PRICE, \$3.75.

## Red • Ball • Brand • Stock • Food.

Purely Vegetable. Not a Secret Preparation. List of Ingredients Sent to Veterinarians on Application.

Sold to Veterinary Surgeons in Bulk, they can make it into appropriate powders of 1 oz. to a dose.

The most Uniformly Successful Digestive Regulator Known.

Veterinarians throughout the country are using it and testifying to their successful treatment of digestive disorders.

Write for Circulars, Price List and Sample Package to

**ATKINS & DURBROW,**

160 PEARL STREET - - - NEW YORK.

## THE BRADWOOD MANUFACTURING CO.



MANUFACTURERS AND LESSORS OF

**THE HUMANE EQUINE OPERATING TABLE**

OFFICE & FACTORY 125 WATER ST. NEW HAVEN, CONN.

## PHILLIPS VETERINARY SPECIALTIES.



Phillips "Perfected" Stomach Tube.  
Phillips Soft Rubber Catheter.  
Phillips "Continuous Stream" Injection Pump  
Phillips "Faultless" Decayed Root Extractor.

Beware of  
imitations  
and so-called  
Phillips  
Tubes.



### PHILLIPS "PERFECTED" STOMACH TUBE.

In the May, 1904, number of the AMERICAN VETERINARY REVIEW, I wrote an article introducing the operation of siphoning the stomach of the horse for the instant relief and positive cure of Stomach Flatulence, Acute Indigestion, Gastritis and Choke.

To insure the operation becoming a success in every surgeon's hands, I had a tube of superior quality manufactured, having correct dimensions, consistency and certain markings, and styled it THE PHILLIPS "PERFECTED."

The success of the operation is unquestionably proven by public demonstrations at State and International Meets, by the Veterinary Colleges teaching and recommending the operation, by imitations manufactured and sold by Veterinary Supply houses, by other tubes manufactured that are complicated in structure and difficult to pass, and proven also by the fact that most veterinary instrument dealers have made a stomach tube their leading add since one year after The Phillips "Perfected" had proven its success.

The Phillips "Perfected" Tube with the accompanying Stilet furnishes the Surgeon with the finest Probang ever offered to the profession. Directions for using accompany each tube. Price \$3.00, less dealers discount of 25%, \$6.00 Cash.

### PHILLIPS SOFT RUBBER CATHETER.

PHILLIPS SOFT RUBBER CATHETER IS OF SUPERIOR quality, four feet long. Neither heat nor cold affect it. Its life with constant usage is from five to ten years. Used as a Tourniquet in foot operations it has no equal. Directions for using and stilet accompany each catheter. Price \$1.75, less dealers discount of 25%, \$1.31 Cash.

### PHILLIPS "CONTINUOUS STREAM" PUMP.

PHILLIPS "CONTINUOUS STREAM" STOMACH AND RECTAL INJECTION PUMP is made of solid brass, nickel plated, simple of construction and easy acting. This pump should accompany every Phillips "Perfected" Tube. No one should practice siphoning the stomach without using an injection pump. Attached to the tube it makes an IDEAL RECTAL INJECTION outfit. Price \$3.00, less dealers discount of 30%, \$5.60 Cash.

### PHILLIPS "FAULTLESS" DECAYED TOOTH EXTRACTOR.

The only extractor that operates within the alveolar cavity. Made expressly for roots and shells. Price \$3.00, less dealers discount of 30%, \$5.60 Cash. Send for circular for complete description of these Specialties.

Address all orders to, J. M. PHILLIPS, D. V. S.,

3732 WEST PINE BL'VD, ST. LOUIS, MO.

## "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1902.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with offsets, keeping the cheek pieces of the halter  $\frac{1}{2}$  to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped, is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

#### Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it inside the nose-band, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(For side-lines, 5 yards sash-cord, cut in two, snaps on one end.)

Price of Halter, \$10.00. For further particulars address T. C. D. F., Hamilton Grange Branch, New York P. O.

# BACILLOL

has been approved in competent literature as a germicide and as the most economical disinfectant, antiseptic and deodorant, whose invariable composition is assured by constant scientific supervision. The fact that it will readily saponify is an absolutely reliable guarantee of its prompt germicidal effect which wholly distinguishes it from the soluble Cresols now in the market, in regard to which it is known that they will not saponify.

**Prof. Dr. Liebreich** says :

The strong disinfecting qualities and the relative non-poisonousness of Bacillol should alone be an inducement to employ it. Besides these merits it deserves mention that it is much more agreeable to manipulate with this preparation than with others of a similar kind, because it makes instruments and utensils less slippery. Also the smell of "Bacillol" disappears readily, which is certainly a quality of some consideration in the treatment of the sick, and particularly for midwifery.

These are features which distinguish "Bacillol" advantageously from other disinfectants, the more so, as its economical side claims special attention.

## Bacillol Vaginal Preparations

are acknowledged to be a Specific against Vaginal Catarrh, an infectious disease (see "American Veterinary Review," No. 1, 1907), the modes of application being as follows :

### **BACILLOL** Vaginal Sticks

These are cut up, in accordance with the graduations, into pencils which can be easily handled and thus provide an economical treatment, more particularly for the live stock of large cattle owners.

### **BACILLOL** Vaginal Cartridges

are frequently given the preference, especially for saving time, because they are easily applied. Both modes of treatment insure the radical and prompt eradication of the infectious vaginal catarrh.

### **BACILLOL** Cartridges for Dysentery in Calves

have successfully stood the test as a remedy for the prevention of Dysentery in calves, applied by introducing a few cartridges into the genital canals of the brood animal shortly before calving. The simplest, most reliable and most economical treatment for the prevention of Dysentery in calves.

Obtainable in the trade and from  
**Bruno Grosche & Co.**  
4 & 6 Jones Lane, New York





**NON-POISONOUS**

THE  
COUNCIL ON PHARMACY  
AND  
CHEMISTRY, A. M. A.  
HAS APPROVED

**NON-IRRITATING**

The intense antiseptic  
**CHINOSOL**  
STRONGER THAN BICHLORIDE

SAMPLES ON REQUEST

TRY IT ONCE  
YOU WILL DISCARD  
ALL OTHER ANTISEPTICS

**CHINOSOL CO.**  
PARMELE PHARMACAL CO.  
SELLING AGT.,  
54 SOUTH ST., N. Y.

Does not  
coagulate albumin

Does no  
damage to tissues

Abscesses

Inflamed  
Glands

Periostitis

Bog Spavin

Capped Knee

Infected  
Wounds

Harness  
Galls

Bruises

Burns

Distemper

Pneumonia

Caked Bag

Orchitis

Sprains

Scratches

Tendonitis



*For Any Inflammatory Condition. Apply Hot and Thick  
Cover With Absorbent Cotton*

Booklet and Spatula on Request



TABLETS  
OF  
**Bacterial Vaccines, Veterinary**

(FOR HYPODERMATIC USE.)

One hundred doses of Parke, Davis & Co.'s Bacterial Vaccines in tablet form may be carried in the space occupied by six doses in bulbs.

Think what this means in convenience!

Think, too, of the advantage of being able to make a bacterial solution of any strength desired, anywhere, any time, at a moment's notice!

We list four of these vaccines:

**Colon Vaccine, Veterinary**  
**Staphylococcus Vaccine (Combined), Veterinary**  
**Streptococcus Vaccine, Veterinary**  
**Streptococcus and Staphylococcus Vaccine (Combined), Veterinary**

Our Hypodermatic Tablets of Bacterial Vaccines (Veterinary) are convenient, active and permanent. Use them in your practice.

SEND FOR FREE BOOKLET ON BACTERIAL VACCINES, VETERINARY.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

**MCKILLIP VETERINARY COLLEGE,**  
**CHICAGO.**

(CHARTERED 1892.)

**The faculty has been reorganized and strengthened by the addition of several specialists of national reputation.**

The equipment of this college is complete in every detail, furnishing the best opportunities for scientific and practical education.

**LARGEST PRACTICE IN THE WORLD.**

**Regular Graduate Course, acquiring the degree of Doctor in Veterinary Medicine.**

**Post-Graduate Course, acquiring the degree of Doctor in Veterinary Medicine.**

School opens September 11th, 1912.

Write for catalogue and other information

GEORGE B. MCKILLIP, M. D. V., Secretary,

No. 1639 Wabash Avenue, Chicago.





# Hausmann & Dunn Co.'s AUTO-CAUTERY

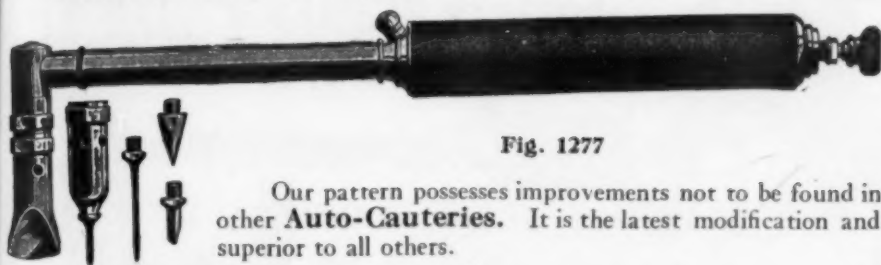


Fig. 1277

Our pattern possesses improvements not to be found in other **Auto-Cauteries**. It is the latest modification and superior to all others.

**Advantages.**—This instrument possesses many advantages over the usual forms of cauteries now in general use, the most important being its simplicity, ease of manipulation with one hand, and maintenance of temperature for nearly one hour, producing the maximum heating effect required for this mode of treatment. Full directions with each outfit.

WRITE FOR CATALOGUE

## PRICES

Complete in Cloth Roll with Alcohol Lamp and Wrench.....	\$15.00
With Ball Point Extra.....	16.50
Complete in Polished Wood Case with Alcohol Lamp, Wrench for Adjusting and 4-oz. G. S. M. C. Bottle for Ether.....	18.00
With Ball Point Extra.....	19.50

## HAUSSMANN & DUNN CO.

Veterinary Surgical Instruments  
Text Books and Supplies

708 S. Clark Street, Chicago.

"WHERE THERE IS PUS"

## Poly-Valent Bacterins

Successfully used in the treatment of abscesses, wire cuts, nail punctures, poll evil, fistulous withers, open joint, strangles, lymphangitis, cellulitis, septic arthritis, quittor, etc.  
6 ampules (2 c.c. each) in package \$1.00

## Influenza Vaccine

A dependable product of proven value, used as an immunizing and curative agent in the treatment of influenza, shipping fever, yards fever, acclimation fever, and febrile diseases of bacterial origin in horses and mules.  
6 ampules (2 c.c. each) in package \$1.00

### Distemper Serum (canine)

A valuable prophylactic and immunizing agent.  
10 c.c. ampule, \$1.00.

### Distemper Bacterins (canine)

Used as a curative agent in conjunction with the "Distemper Serum."  
6 ampules 2 c.c. each \$1.00.

N. B.—The complete treatment containing one 10 c.c. ampule of the Distemper Serum and 6 ampules of the Distemper Bacterins, \$2.00.

## Accuracy Laboratories

1714 and 1716 West Madison Street

Chicago, Ill.

Painstaking comparisons made repeatedly  
by the most famous veterinarians of  
the world have established the fact that—

## **Glyco-Heroin (Smith)**

is decidedly the most reliable remedy for  
**COUGH, BRONCHITIS, LARYNGITIS AND PNEUMONIA**  
**IN HORSES, CATTLE OR DOGS**

Its action is more prompt than that of any  
other remedy, and no danger whatever attends  
its proper administration.

Glyco-Heroin (Smith) promptly checks  
cough, relieves suffocative breathing, liquefies  
bronchial and pulmonary exudations, allays  
fever, alleviates pain, overcomes nervousness  
and restores the appetite.

---

**DOSE:** For horses or cattle,  
one ounce every two or three  
hours. For dogs, from ten  
drops to one-half teaspoonful.

**SUBSTITUTION.** To insure entirely  
satisfactory results, it is necessary to em-  
phasize the name "Smith" when prescrib-  
ing, for many worthless imitations of Glyco-  
Heroin are dispensed by unscrupulous  
dealers.



---

**MARTIN H. SMITH COMPANY**  
**NEW YORK, N. Y. U. S. A.**

## HAVE A HAND IN RESERVE



With a rubber bulb cautery both hands are occupied. Save the annoyance of pumping. Guide the firing iron with one hand, leaving the other free.

### Dechery's Ether Cautery

Is the apparatus for the veterinarian who wishes to HAVE A HAND READY for emergency.

Dechery's Ether Cautery, in wood case, with 4 firing points, combination wrench and ether bottle, net \$18.00  
In canvas pouch and without ether bottle, net 15.00

Like all products having our trade-mark, Dechery's Ether Cautery may be had from your local dealer, or

**The Kny-Scheerer Co.**

Manufacturers of Veterinary Instruments of Quality  
404-410 West 27th Street New York

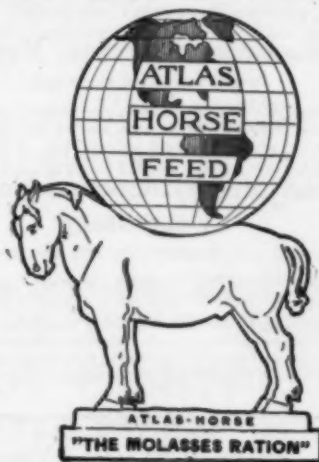


Trade-Mark

## ATLAS HORSE FEED

merits the veterinarian's thoughtful consideration.

**IT IS NOT**  
a medicine, nor a condimental food; neither does it contain any drugs or chemicals whatever, nor should it be confused with so called "patent feed."



**IT IS**  
a genuine molasses ration made on scientific principles and rich in pure Louisiana cane molasses. Highly nutritive, thoroughly digestible, and infinitely more convenient than mixing your own molasses feed.

Full particulars furnished upon application to

## The Meader-Atlas Co.

New York Office: 105 and 107 HUDSON STREET.



# TABLETS OF **Bacterial Vaccines, Veterinary**

(FOR HYPODERMATIC USE.)

One hundred doses of Parke, Davis & Co.'s Bacterial Vaccines in tablet form may be carried in the space occupied by six doses in bulbs.

Think what this means in convenience!

Think, too, of the advantage of being able to make a bacterial solution of any strength desired, anywhere, any time, at a moment's notice!

We list four of these vaccines:

## **Colon Vaccine, Veterinary**

(COLON BACTERIN.)

Bio. 760. Vials of 20 tablets (100,000,000 bacteria per tablet); per vial, \$2.50.

Bio. 761. Vials of 10 tablets (500,000,000 bacteria per tablet); per vial, \$1.30.

*Therapeutic Indications.*—Peritonitis, cystitis, urethritis, renal abscesses, enteritis, when caused by *Bacillus coli communis*; also anal fistula, catarrhal jaundice and abdominal abscesses.

## **Staphylococcus Vaccine (Combined), Veterinary**

(STAPHYLOCOCCUS BACTERIN.)

Bio. 781. Vials of 20 tablets (100,000,000 bacteria per tablet); per vial, \$2.50.

Bio. 782. Vials of 10 tablets (500,000,000 bacteria per tablet); per vial, \$1.30.

## **Streptococcus Vaccine, Veterinary**

(STREPTOCOCCUS BACTERIN.)

Bio. 801. Vials of 20 tablets (100,000,000 bacteria per tablet); per vial, \$2.50.

Bio. 802. Vials of 10 tablets (500,000,000 bacteria per tablet); per vial, \$1.30.

## **Streptococcus and Staphylococcus Vaccine (Combined), Veterinary**

(STREPTOCOCCUS AND STAPHYLOCOCCUS BACTERIN, COMBINED.)

Bio. 821. Vials of 20 tablets (100,000,000 bacteria per tablet); per vial, \$2.50.

Bio. 822. Vials of 10 tablets (500,000,000 bacteria per tablet); per vial, \$1.30.

*Therapeutic Indications* (pertaining to the three vaccines immediately preceding).—Fistulous withers, poll evil, strangles, influenza, lymphangitis, pyemic arthritis; infected wounds, such as open joints, nail punctures, calk wounds, wire cuts and surgical wounds; also nasal catarrh, suppurative ophthalmia and all purulent conditions in general due to invasion of the staphylococcus, streptococcus, or both.

Our Hypodermatic Tablets of Bacterial Vaccines (Veterinary) are convenient, active and permanent, Use them in your practice.

SEND FOR FREE BOOKLET  
ON BACTERIAL VACCINES, VETERINARY.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

# TALLIANINE

TRADE MARK REGISTERED.

Administered by intravenous injections through the jugular vein and has been demonstrated to be the most rational and positive treatment for

PNEUMONIA of all forms and at all stages,  
PURPURA HEMORRHAGICA, PULMONARY CONGESTION,  
TYPHOID FEVER and allied diseases,  
INFLUENZA, SEPTICAEMIA, PYAEMIA and  
all septic conditions,  
DISTEMPER, SHIPPING FEVER, SUNSTROKE and  
HEAT EXHAUSTION.

Excellent results have also been obtained by its use in the treatment of Laryngitis, Thermic Fever, Pleurisy, Septic Metritis, Nephritis, Infectious Fever and Wet Eczema.

---

A TRIAL WILL CONVINCE THE MOST SKEPTICAL.

---

To be ordered from all druggists and veterinary supply dealers  
or from the sole agents.

**WALTER F. SYKES & CO.,**  
**85 WATER STREET, NEW YORK.**

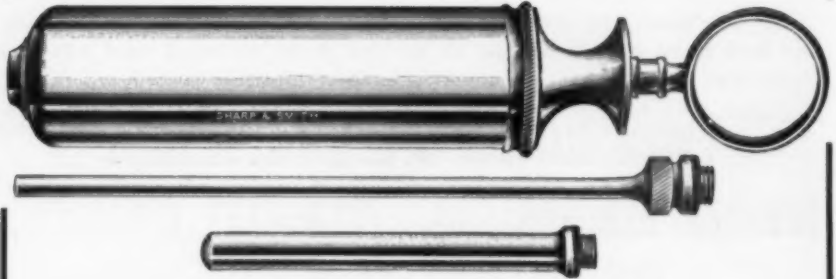
132 Chestnut St., PHILADELPHIA, PA. 113 Broad St., BOSTON, MASS.

WESTERN AGENTS

R. R. STREET & CO., 184 Washington Street, CHICAGO, ILLS.

DESCRIPTIVE MATTER SENT UPON REQUEST.

## EXTRA SPECIAL OFFER



Our 2-Ounce Extra Heavy Perfected Rounded End Heavy Double Leather Plunger, Nickel Plated Dose Syringes, with one 3" Heavy Dose Pipe and one 6" Quitter Pipe or one only 6" Heavy Dose Pipe, \$0.90 each, postage extra, 18 cents. \$4.50 per half dozen or \$8.00 per dozen, F. O. B., Chicago. Same Syringe with 9" Heavy Dose Pipe only \$1.00. each. \$5.00 per half dozen or \$8.50 per dozen. F. O. B., Chicago.

## FOR A LIMITED TIME ONLY



Our 5-inch Certified Magnifying Thermometers with Ball Bulb and Loops, each in hard rubber case for testing cattle as well as for every day use. Each, 60 cents. Per dozen, \$6.00

Same Thermometer except without Loop, but Ball Bulb, 50 cents each. \$5.00 per dozen.

Our 400 Page Veterinary Catalog "G," 10th edition and Supplement Free Postpaid on request.

## SHARP & SMITH

Manufacturers, Importers and Exporters of High Grade  
Veterinary Instruments and Supplies

103 N. WABASH AVE.,

CHICAGO, ILL.

UNITED STATES  
CANADA  
MEXICO  
WEST INDIES

GREAT BRITAIN  
IRELAND  
AUSTRALIA  
NEW ZEALAND

HAWAII  
PHILIPPINES  
INDIA  
SOUTH AFRICA

# M·A·C

MISTURA

ARGENTI

COMPOSITA



## THE MODERN TREATMENT

FOR SPLINTS, SPAVINS, CURBS, SIDE BONES, RING-BONES, QUITTOR, SHOE BOILS, OSSIFICATIONS, INFLAMED TENDONS, BURSA LAMENESS, ETC.

## ADVANTAGES

CAN BE APPLIED IN A FEW SECONDS.  
DOES NOT SOIL THE HANDS AS IT IS APPLIED WITH THE BRUSH WHICH ACCOMPANIES EACH BOTTLE.  
DOES NOT BLEMISH THE HORSE NOR INTERFERE IN ANY WAY WITH HIS DAILY WORK.  
MORE PROMPT THAN BLISTERS IN EVERY CASE.  
IN ACUTE OR SUB-ACUTE CASES, BETTER THAN FIRING.

**SOLD ONLY TO VETERINARIANS**

OR ON THEIR ORDER

MANUFACTURED AND  
FULLY PROTECTED BY

**CARTER-LUFF CHEM. CO. HUDSON, N.Y.**

## PRICES TO THE PROFESSION (DELIVERED)

SINGLE BOTTLE	- - \$2.00	1/4 DOZEN	- - \$5.00
1/2 DOZEN	- - - \$8.00	ONE DOZEN	- \$15.00
TWO DOZEN	- - \$25.00		

NO DISCOUNTS IF ORDERED OF DEALERS.

A DIVIDEND OF ONE BOTTLE FREE WITH EACH 1-4 DOZEN, TWO FREE WITH 1-2 DOZEN, FOUR FREE WITH ONE DOZEN, AND EIGHT FREE WITH TWO DOZEN WILL BE GIVEN IF THE ORDER IS SENT DIRECT TO THE MANUFACTURERS

**CARTER-LUFF CHEM. CO. HUDSON, N. Y.**

(COVER)

Handling Horses made easy by using the Veterinarian's  
Favorite Ambulance.



**RECH-MARBAKER CO.,**

**SPECIALISTS—DESIGNERS.**

**MAKERS OF HIGH GRADE AMBULANCES.**

**Girard Ave. and 8th St.,                      PHILADELPHIA, PA.**

*Send for information and catalogue.*

**SERUMS :**

Tetanic  
 Streptococcic  
 Distemper and Influenza  
 Hog Cholera

**BACTERINS :**

Anti-Suppurine  
 Pneumonia  
 Streptocine  
 Influenza

**VACCINES :**


Anthrax  
 Black Leg  
 Hog Cholera

## ANTI-SUPPURINE

A polybacterial vaccine or bacterin for the treatment of Suppurating Conditions in Veterinary practice. Has been very extensively and successfully used since the spring of 1910.

In packages of 6 vials of 2 c. c., each, \$1.50; or \$15 per dozen packages.

In vials of 20 c. c., \$2; or \$20 per dozen.

 In liquid form ready for use.

## EUCAMPHINE

A compound of eucalyptus and camphor oils, cresylic acid, and saponaceous oils. Indications: Internally, whenever an antiseptic, antiperiodic, antiferment or antispasmodic is required. Externally, employed as a wash, douche, and dressing. High-class, agreeable and effective disinfectant and deodorant.

Pints,	\$ .50	Gallons,	\$3.00
5-pints,	\$2.00	2-gallons,	\$5.50
	5-gallons,		\$12.50

## GUAIALYPTOL

Eucamphine with Guaiacol. Indications:— All catarrhal affections of the respiratory and intestinal tracts, and notably for treatment of Laryngitis, Pharyngitis, Bronchitis, Oedema Glottidis, Influenza, Distemper, Strangles, Infectious Diarrhea, Septicemia, Gastric or Intestinal Flatulence, etc. It is also serviceable in Pneumonia.

Pints, \$ .75	5-pints, \$2.50	Gallons, \$4.00
---------------	-----------------	-----------------

 Ask for samples, and get acquainted with Eucamphine and Guaialyptol.

THE

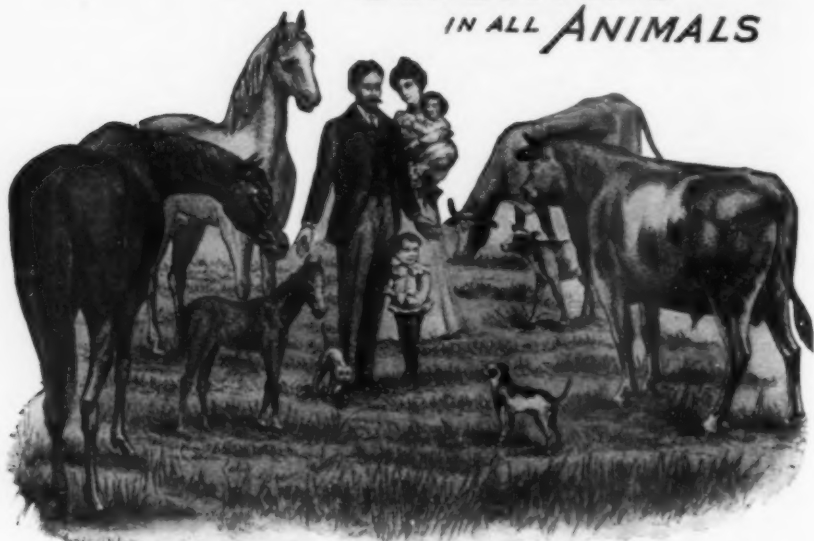
**SORBY VACCINE COMPANY**  
 CHICAGO, ILL.

EASTERN SUPPLY DEPOT  
**KALISH PHARMACY**  
 Twenty-Third Street and Fourth Ave.,  
 NEW YORK CITY.



# Sanmetto

FOR THE  
GENITO-URINARY  
CONDITIONS  
IN ALL ANIMALS



[The Tender-Hearted Veterinarian with Wife, Daughter and little Son in the midst of his Patients that seem to reciprocate his kindness.]

A POSITIVE REMEDY  
—IN—  
**DISEASES OF THE GENITO-URINARY ORGANS**  
—OF—  
**THE HORSE AND DOG AS WELL AS MAN**

Doctor, when you have a Horse or Dog suffering from Kidney, Bladder or Urethral Trouble; or from any Irritation or Inflammation of the Urinary Tract; or from Impotency or Sterility,

**ORDER SANMETTO**

Sanmetto is largely used in Veterinary Practice for the above troubles and has been found Worthy and Reliable. It is also strongly endorsed and much used in AZOTURIA—many cases reported cured with it. Sanmetto acts as a vitalizing tonic to the Genito-Urinary Organs. It is eliminated from the System almost entirely through the Kidneys and Bladder—hence its soothing, healing and tonic power upon the entire Urinary Tract.

To avoid substitution, order thus: R, SANMETTO—one bottle—original package.

DOSE :—For Horse, one ounce three times a day. For Dog, one teaspoonful three times a day.

Price One Bottle, \$1.00. Case of One Dozen Bottles, \$8.00. Sold by all Reliable Druggists Pamphlet on application to **OD CHEM. CO., New York.**

# MODERN

## VETERINARY MEDICINES OF MERIT

**ANTITETANIC SERUM** (von Behring) in accordance with the standardization of U. S. Government, in aseptic glass syringes of 1500 and 3000 immunizing units.

**BOVOVACCINE**, Prof. von Behring's immunizing antitubercular substance. "I cannot too strongly recommend vaccination, according to von Behring's method, to dairymen and breeders wishing to build up and maintain healthy herds." C. M. B.....D. V. S.

**DYMAL**, non-irritant, odorless, exsiccating, antiseptic powder; by diminishing wound secretion, it lessens danger of infection; specific in weeping eczema and burns.

**GALLOGEN**, a pure, intestinal astringent, indicated in scouring of road horses, enteritis, gastro-enteritis haemorrhagica, etc. "I have found it very efficacious in diarrhoea in canines even when found in connection with bloody discharge." J. A. McL.....D. V. S.

**LAVISOL**, a powerful antiseptic and disinfectant, non-irritant, stable, non-toxic, clearly soluble in water, safer than carbolic acid or bichloride of mercury, and twice as effective.

**TUBERCULIN**-Behringwerk, in concentrated form or ready for use; also for use according to the intracutaneous test.

**VALIDOL**, valerianic acid menthylester, an analeptic and sedative, indicated in the nervous form of canine distemper, collapse and vomiting in dogs and cats.

**VIOFORM**, haemostatic antiseptic powder, takes place of Iodoform without its odor.

### CLINICAL THERMOMETERS HYPODERMIC SYRINGES

---

**C. BISCHOFF & CO. INC.,**

451-453 Washington Street - - NEW YORK, N. Y.

## RELIABLE PREPARATIONS FOR THE VETERINARIAN

### CO. SOL. CRESOL.-MARTIN

(Contains 80% Pure Cresol)

A powerful concentrated antiseptic, antizymotic and germicide, when used in solutions of one-half to one per cent. strength. It forms a clear solution with all kinds of water, and is unsurpassed for all forms of surgical operations.

### CREOGEN-MARTIN

(The Veterinarians Antiseptic)

For many years this has been a standard pharmaceutical for the veterinary profession, and its wide range of usefulness in general practice has received the unqualified endorsement of the profession.

### CREOZOL-MARTIN

Prepared from standardized coal-tar creosote oil. Designed for dipping and disinfecting purposes in dealing with the diseases of livestock. Write for prices and full information on above preparations.

### MARTIN CHEMICAL CO.,

342-344 S. SCHUYLER AVE., KANKAKEE, ILLINOIS

## Veterinary Medicine

*Revised to Date. Standard and Worldwide in Comprehensiveness and Use*

By JAMES LAW, F.R.C.V.S.

Ex-Director N. Y. S. Vet. Coll. Emeritus. 50 years Teaching and Practice

*In 5 Vols. 8vo, 3277 pages*

**Vol. I.**—Respiratory and Circulatory. New chapters on Blood and Lymph. pp. 557, \$4, 3d Ed., 1910.

**Vol. II.**—Digestive, Hepatic, Tryptic. New chapters on Poisons, Ductless Glands, Hormones, Metabolism and Autointoxication. pp. 592, \$4, 3d Ed., 1911.

**Vol. III.**—Nervous, Genitourinary, Eye, Skin, Systemic. pp. 611, \$4, 3d Ed., 1911.

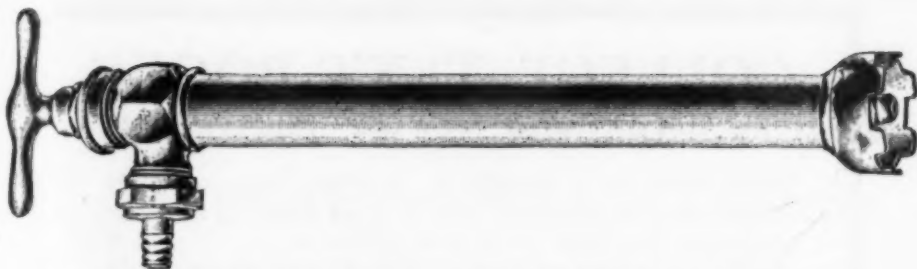
**Vol. IV.**—Microbian, Pestiferous, Prevention, Suppression, Exclusion, Micropathology, Serum Poisons, Serum Therapy, Immunization, etc. Scientific principles, general and specific. pp. 789, \$5, 3d Ed., 1912.

**Vol. V.**—Parasites and Parasitism. Scientific Extinction. pp. 564, \$4, 2d Ed., 1909.

*Vol. IV. has General Index of Vols. I. to IV. 3d Ed.*

Order today from the author, ITHACA, N. Y.

Carriage paid on receipt of price.



- V/1441. **The Queen City Continuous Flow Injection and Suction Pump.** This pump is the best pump made for stomach tube, as it can be used for injection or suction, and is continuous flow. It is made of heavy brass throughout, heavily nickel plated, no parts to rust or get out of order. 16 in. long. **Special Price.** pump only . . . . . \$3 50
- V/1442. **Queen City Pump,** with six feet heavy, white, non-collapsible tubing and wood nozzle. **Special Price** . . . . . 5 00
- V/1443. **Queen City Pump,** with Woche's 10-foot maroon rubber Stomach Tube and Stilet. **Special** . . . . . 7 50

We carry a complete line of Auto-Cauteries, Roaring Instruments and many new designs of other instruments. Submit your wants to us.

*Complete Veterinary Catalogue sent Free upon request.*

## THE MAX WOCHER & SON CO.,

Manufacturers of High Grade Veterinary Instruments and Hospital Supplies.

19-21-23 6th AVE. WEST :: :: CINCINNATI, OHIO.

You will not be disappointed in the use of

# OUR ANTI-INFLUENZA VACCINE

Which has proved its efficiency in the prevention and cure of

## Influenza, Strangles and Shipping Fever

This VACCINE is of highest potency, is permanent, easily administered, and of moderate cost.

An Ideal Preparation for this important and widespread group of diseases, in its use you do not share in an experiment.

PRICE—Single Dose \$0.50; Four Doses \$1.50; Twelve Doses \$4.00

(Special quotations given for large quantities.)

## Beebe Biological Laboratories

(DR. W. L. BEEBE, Director)

ST. PAUL, MINN.

## COLLEGE TEXT BOOKS

"LEADERS—ALL OF THEM"

**FREIDBERGER & FROHNER.** Veterinary Pathology, \$8.00  
**HOBDAV.** Surgical Diseases of the Dog and Cat, . . . 3.25  
**PATON.** Physiology for Veterinary Students, . . . 3.00  
**KITT.** Text Book of Comparative Veterinary Pathology, 4.00  
**JOWETT.** Blood Serum Therapy, Preventive Inoculation  
 and Toxins and Serum Diagnosis, . . . . . 1.75

### Our 1912 Catalogue of Veterinary Books

is now ready and is the most complete list of books on this subject ever issued. A copy will be sent FREE upon application.

In addition to our own publications, we carry the books of all of the other publishers. Upon receipt of the advertised price, all orders shipped promptly and *express charges prepaid.*

### CHICAGO MEDICAL BOOK COMPANY

Honore and Congress Streets, - - - - - CHICAGO

*Purchasers of the Veterinary Business of W. T. Keener & Co.*

## Air-Cushion Rubber Pads

Rubber  
horse-Shoe

IDEALISM IN HORSE-SHOEING.  
 It follows closely nature's scheme  
 in anatomy and physiology, and is  
 therefore correct.



Many horses that are lame on  
 any other pad or shoe will go sound  
 on Air-Cushion Pads.  
 There is a reason. "Write us."

Don't be deceived by inferior substitutes.

**REVERE RUBBER CO., (Sole Mfrs.)** Boston, New York, Pittsburg,  
 Chicago, New Orleans.

# LOCAL ANESTHESIA IS MADE EASY

BY

## Novocain and L-Suprarenin Synthetic Hypodermic Tablets

There are many conditions in which the Veterinarian can employ a LOCAL ANESTHETIC and these READY-TO-USE TABLETS offer him a non-toxic and powerfully efficient agent.

*A Trial will Readily Verify this Statement.*

Literature and Samples on Request

### FARBWERKE-HOECHST COMPANY

Successors to VICTOR KOECHL & CO.

H. A. METZ, Pres.

34 BEACH STREET, NEW YORK

## AMERICAN VETERINARY REVIEW

A CORPS OF  
DISTINGUISHED  
COLLABORATORS

INCORPORATED  
A JOURNAL OF VETERINARY PROGRESS.

UNSURPASSED  
AS AN  
ADVERTISING  
MEDIUM.

EDITED BY  
A. Lianard, M.D.V.M. R. W. Ellis, D.V.S.  
509 WEST 152<sup>d</sup> STREET, NEW YORK.

Subscription Price, \$3.00 per annum, Invariably in Advance;  
Students, \$2.00; Single Copies, 25 cents.

#### ADVERTISING RATES.

	1 Year.	6 Months.	3 Months.	1 Month.
Whole Page . . . . .	\$100.00	\$60.00	\$33.00	\$12.00
Half Page . . . . .	65.00	40.00	22.00	8.00
Quarter Page . . . . .	40.00	25.00	15.00	6.00
Eighth Page . . . . .	25.00	15.00	9.00	4.00

Preferred pages extra, and must be secured in advance. The best medium through which to reach the largest number of veterinarians of this and other countries. The oldest and most widely-circulated veterinary publication in America.

Address ROBT. W. ELLIS, Business Manager,  
509 West 152<sup>d</sup> Street, New York City.



## Two Important Books

### Winslow's 1913 **Materia Medica and Therapeutics**

Chapters on serum diagnosis, vaccine therapy, poisons and their antidotes, the use of all medicinal agents—and Dr. Winslow's extensive changes and additions—make the 1913 edition (published this month) of Winslow's "Veterinary Materia Medica and Therapeutics" a wholly new book through which other Materia's become virtually obsolete.

Have this Materia and you will need no other. It is the complete treatise. In its successive editions since 1901 it has been the textbook of all Colleges and the highest authority consulted by practitioners.

### Dollar's **Regional Surgery and Operative Technique**

John Dollar, President of the Royal College, is England's most eminent veterinary authority.

The well-known "Regional Veterinary Surgery" and "Operative Technique" are his books. He has now fused them into one big volume offered at much lower price, yet containing the same delineation of the elementary and fine points of surgery, revised throughout and enlarged to all recent developments in this Science, including interesting cases.

1115 pages of condensed specifications so clearly stated that *through them you cannot be unsuccessful in any known veterinary operation.*

**These Books Constitute Veterinary Science—**  
For they present all therapeutics and all surgical information necessary to a successful practice.  
**Postcard us for sample pages and contents.**

**William R. Jenkins Co.**  
**Publishers**

6th Ave. at 48th St.,

New York City

### COMPLETE VOLUMES OF REVIEW FOR SALE.

FOR SALE.—American Veterinary Review. Vols. 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, complete. Clean. \$15. S. R. Howard, Hillsboro, O.

### VETERINARY LOCATIONS:

Veterinary locations and practices handled in all states. Drug stores for sale and positions in drug stores. Nurses, physicians, dentists, furnished and located for practices. F. V. Knies, R. P., No. 505 Bee Bldg., Omaha, Nebraska. Established 1904.

### PRACTICE FOR SALE.

A well established practice in Southern New Hampshire. One hour and fifteen minutes' ride from Boston. Best of reasons for selling. Address F. H. S., care of American Veterinary Review, 509 W. 152d Street, New York, N. Y.

### ASSISTANT WANTED.

WANTED.—An assistant who is not afraid of hard work, but wants a steady situation. Must have the best of recommendations as to honesty, sobriety, ability, etc. Address, "Steady," care of American Veterinary Review, 509 West 152d St., New York, N. Y.

### ASSISTANT WANTED.

WANTED AN ASSISTANT in a large city practice. Address immediately, X. Y. Z., care of American Veterinary Review, 509 West 152d St., New York, N. Y.

*WE DESIRE TO CALL TO YOUR NOTICE*

## VACCINE EQUINA-LINTZ

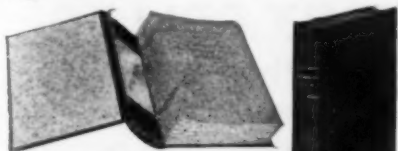
An absolutely specific vaccine for the treatment of  
**EQUINE DISTEMPER or SHIPPING FEVER**  
and sequela

**THE COMPARATIVE VACCINE LABORATORIES, INC.**

214 Livingston Street, Brooklyn, N. Y.

### THE "BIG BEN" BINDER

The binding of magazines in this binder is as easy as filing papers. No punching of holes is necessary. The bound matter opens flat to any page, even more so than a regularly bound book.



Each binder holds one volume, and any number can be readily removed if it is desired to take a copy to a meeting, etc., to quote from. Put in each number as you get it and you have your numbers bound at the end of each volume.

CLOTH WITH GOLD LETTERING, PRICE, \$1.00  
Address **AMERICAN VETERINARY REVIEW**  
509 WEST 152d ST., NEW YORK, N. Y.

## Just Enough

and just as they want it. The right way to salt animals is to let them help themselves.

### Compressed Pure-Salt Bricks

In our Patent Feeders, supply refined dairy salt. They mean animal thrift. They cost but little. Convenient for you and your animals suffer no neglect. Ask your dealer and write us for booklet.



**Belmont  
Stable  
Supply Co.**  
Palisades, N. Y.  
Brooklyn,  
N. Y.

# **INDIAN A VETERINARY COLLEGE**

CONFERS THE DEGREE OF  
**DOCTOR OF VETERINARY MEDICINE**

Write for Catalogue

£C4 E. Market St.      Indianapolis, Indiana

## **NEW YORK STATE VETERINARY COLLEGE,**

ESTABLISHED AT

**CORNELL UNIVERSITY, ITHACA, N. Y.**

BY CHAPTER 153, LAWS OF 1894.

This college is well equipped with modern facilities for scientific and practical instructions for undergraduates and post-graduates. Most varied practice for students in the free clinics. Regular graded course, three years of nine months each. Entrance by Regents' "Veterinary Student Certificate," or by examination, September 12th, 1912. Matriculation September 22d, 1912.

\*\*\* Tuition Free to New York State Students.

For extended announcement address,

**Professor VERANUS A. MOORE, Director.**

## **NEW YORK UNIVERSITY.**

### **New York-American Veterinary College.**

(New York College of Veterinary Surgeons, chartered 1857, and the American Veterinary College, chartered 1875.)

Session 1912-1913 began September 26, 1912.

Write for New Catalogue and all information to

**W. J. COATES, M.D., D.V.S., DEAN,**

141 West 54th Street,

New York City.

## **CHICAGO VETERINARY COLLEGE**

2533, 2535, 2537 and 2539 State Street, Chicago, Ills.

Organized and Incorporated under the Laws of the State of Illinois, 1883.

Regular Session commences on or about September 15th in each year.

For Prospectus giving all information as to curriculum, fees, etc., address the President

**JOSEPH HUGHES, M.R.C.V.S.,**

2537 and 2539 State St., Chicago, Ills.

## THEY WORK FINE TOGETHER: POLY-BACTERINS AND NUCLEIN

They operate hand in hand—these two therapeutic agents.

In their action they are synergistic, combining to assist nature effectively in warding off disease organisms and in overcoming them when already established. They make a sturdy therapeutic pair which you will do well to employ in your practice.

### THIS IS HOW THEY CO-OPERATE

#### POLY-BACTERINS

1. Increases the opsonins in the blood.
2. Makes bacteria more easily destroyed by the phagocytes.
3. Stimulates the organism to recuperate.

#### NUCLEIN

1. Increases the number of phagocytes in the blood.
2. Re-inforces the army of bacteria-destroyers.
3. Greatly increases the body resistance.

In many cases either one, alone, is sufficient, but in some both remedies are necessary if a recovery is to be secured, and in *all* cases results will be quicker and surer where both are employed conjointly.

Poly-Bacterins: per dozen boxes, 6 ampules each	\$15.00
Less than one-half dozen quantities, per box	1.50
Nuclein Solution: per dozen 4-oz. bottles	10.00
In less than half-dozen quantities, per bottle	1.00
Per dozen pints	35.00
In less than half-dozen quantities, per pint	3.50

**THE ABBOTT ALKALOIDAL COMPANY**  
RAVENSWOOD, CHICAGO

**PULMONARY EMPHYSEMA, "BROKEN WIND,"  
"HEAVES," and all Bronchial Affections  
successfully treated with**

## VERGOTININE

"A precious therapeutic product."

—Dr. Gambarotta, Royal Vet. School, Turin.

"The only product capable of ameliorating and curing that disease."—Dr. Bernaud, Chief Vet., Compagnie des Voitures Parisiennes l'Urbaine, Paris.

"An energetic reconstituent . . . and dynamic tonic."—Dr. H. Perrin, Chief Military Veterinarian.

**VERGOTININE** has been used very successfully in America for several years in the treatment of the above referred to conditions by a large number of veterinarians. Further particulars furnished on request.

Sole Distributors for United States, Canada and Mexico

**PASTEUR LABORATORIES OF AMERICA**

New York: 366-368 West 11th St. Chicago: 443-445 So. Dearborn St.

# PETROGEN—WYETH

---

A non-irritating, highly penetrating and soluble medium for the administration of medicaments which ordinarily prove difficult of use because of their irritating properties.

**Petrogen** is particularly well adapted for veterinary practice for the administration of iodine.

**Iodine-Petrogen** will cause no irritation or blistering, nor will its continued application result in a falling out of the hair, or cause any permanent staining.

**Iodine-Petrogen** is indicated in all forms of sprains, stiff joints, shoulder lameness, swellings, bone enlargements, and all conditions where a stimulating action on the glands and blood-vessels is required.

**Iodine-Petrogen** may be employed freely and indefinitely without producing the tendency to blister, which so often precludes entirely the use of the tincture of iodine.

---

LITERATURE AND SAMPLES OF IODINE-PETROGEN, OR OTHER PETROGEN COMBINATIONS, WILL BE SUPPLIED ON REQUEST

---

JOHN WYETH & BROTHER, Inc.

PHARMACEUTICAL CHEMISTS,

PHILADELPHIA

# THE MARK: "NORWICH"

Applied to remedies used in human and veterinary practice, carries with it the guarantee of excellence based on more than a quarter-century of successful manufacture and development of high-grade pharmaceuticals. This applies to our complete line of assayed fluid-extracts, tinctures, hypodermics, ointments, boluses, tablets, etc., as well as to our specialties.

## "A-V-C" BLISTER

Made from fresh, pure materials, according to the formula of the American Veterinary College, this gives results away ahead of mercuric iodide and cantharides preparations. Our facilities for manufacture enable us to offer this superior product at a low cost.

## VETRINOL POWDER

An ideal antiseptic and astringent dusting powder, approved by veterinarians as a superior dry dressing in burns, sores, cuts, wounds and other affections of the skin. It heals rapidly without causing irritation. Furnished in convenient sprinkler boxes.

## THE NORWICH PHARMACAL CO.

Laboratories and Main Offices: Norwich, New York

New York City Branch: 60 Beekman St., Corner Gold

Telephones: Beekman 3910 and 3911

Chicago Branch: 1100-1108 W. 37th St.

Kansas City Branch: 1424 Walnut St.

## SIMPLICITY EQUINE OPERATING TABLE



Has all movements necessary for all surgical operations.

The base rests on circular bearings enabling the operator to rotate the field of operation to the light.

By shifting a single lever, the table can be inverted, placing the patient in

position for inferiorly located operations, such as Umbilical Hernia, Scrotal Hernia, etc.

Conkey's Veterinary Supply House, Holland, Mich.



For delicate Toy Breeds there is nothing to equal

## SPRATT'S "PET" "TOY PET" or "MIDGET" BISCUITS

None Genuine unless stamped with a **X**.

Send stamp for "Dog Culture." It contains valuable information and a full list of the innumerable foods, etc., manufactured by

### SPRATT'S PATENT LIMITED

Manufacturers of "SPRATT'S DOG CAKES."

San Francisco, Cal., St. Louis, Mo., Cleveland, Ohio, Montreal, Can. Res. Supt. at Chicago, Ill.  
New England Agency, Boston, Mass. Factories also in London, England, and Berlin, Germany.



# THE OHIO STATE UNIVERSITY

---

## COLLEGE OF VETERINARY MEDICINE

---

Columbus, O.

Offers a three year graded course leading to the degree of Doctor of Veterinary Medicine. Unexcelled laboratory and clinical facilities. New buildings especially designed for teaching veterinary medicine according to the most approved modern methods. Faculty of specialists devoting whole time to teaching. For College Bulletins address **DAVID S. WHITE, Dean.**

---

## THE GEORGE WASHINGTON UNIVERSITY

---

### College of Veterinary Medicine, Washington, D. C.

---

Offers a graded four year course leading to the degree of Doctor of Veterinary Medicine (D.V. M.), beginning with the session 1912-13.

This course is designed for well educated young men employed in the government service or elsewhere during the day. Lectures begin at 5. P. M.

School recognized by American Veterinary Medical Association, U. S. Civil Service Commission, U. S. Bureau of Animal Industry and State Examining Boards.

Clinics, hospitals, military posts, government laboratories and experiment stations located at the National Capital give students superior advantages in acquiring a broad education in veterinary science. For catalog, address

**DAVID E. BUCKINGHAM, V. M. D.**

Dean of Veterinary Faculty,

2113-15 FOURTEENTH ST., N. W.

---

## The Kansas City Veterinary College,

---

N. W. Corner 15th St. and Lydia Ave.

Kansas City, - - - Missouri.

A three year graded course. Daily clinical instruction. Excellent laboratory equipment. Graduates are eligible to membership in the American Veterinary Medical Association, also eligible to appointment as U. S. Veterinary Inspectors and as U. S. Army Veterinarians. . . .

**FOR CATALOGUE, ADDRESS**

**.... S. STEWART, Dean.**

---

## UNIVERSITY OF PENNSYLVANIA.

---

**SCHOOL OF VETERINARY MEDICINE.**

*The course of instruction is graded and extends over three years, with one session beginning the 4th Friday in September, and ending the 3d Wednesday in June in each year.*

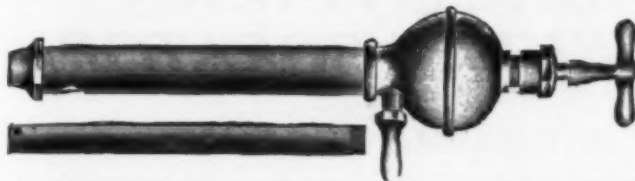
Practical Instruction, including Laboratory Work in Pharmacy, Chemistry, General Biology, Histology, Physiology, Comparative Osteology, Dissecting, Botany, Pathology, Bacteriology, and Inspection of Meat and Milk, with personal care and treatment of animals in the hospitals and clinics, is a part of the regular course without additional expense.

Graduates of this school are eligible for membership in the American Veterinary Medical Association.

For Catalogue, Address **LOUIS A. KLEIN, V.M.D.,** Dean of Veterinary Faculty,

Dept. F, Cor. 39th St. and Woodland Ave., Philadelphia.

## THE SIMPLEX CONTINUOUS FLOW PUMP



Is made of solid brass and nicely nickel plated. It is an actual continuous flow pump, simple

of construction and easy acting. Gives perfect satisfaction wherever used. Price \$5.25.

### Heavy Brass Dose Syringes

Nickel plated, 2 oz. size, with 2 pipes. \$1.00 each; half dozen, \$5.50; dozen, \$10.00.



New Standard Veterinary Thermometer, with ring to hold cord. Same as recommended by the B. A. I. Price 60c. each; dozen, \$6.00.

**FRANK S. BETZ CO., Hammond, Ind.**

*The Largest Manufacturer in the World of Veterinary, Surgical and Dental Instruments and Supplies. Write for Catalog.*

ESTABLISHED 1851.

INCORPORATED 1897.

## EIMER & AMEND, WHOLESALE DRUGGISTS,

205, 207, 209 and 211 THIRD AVENUE, NEW YORK CITY

MAKE A SPECIALTY OF ALL

**Drugs, Extracts, Tinctures, Chemicals,  
Etc., Etc., Used in Veterinary Practice.**

**E. and A.'s VETERINARY GLYCERIN SUPPOSITORIES.**

**SULFGLYCEROLE FOR SKIN LESIONS.**

**SULFGLYCEROLE OINT. FOR SCRATCHES.**

SOLE AGENTS FOR

**H. HAUPTNER, BERLIN, GERMANY,**

**VETERINARY INSTRUMENTS.**

Write for Catalogue !!!

PASTEUR-NEW YORK • CABLE ADDRESSES • PASTEUR-CHICAGO

PARIS • LONDON • HAVANA • MANILLA • MEXICO • MONTREAL • SIDNEY

# PASTEUR LABORATORIES

OF AMERICA  
BIOLOGICAL PRODUCTS

NEW YORK 366 368 WEST 117<sup>th</sup> ST.

SAN FRANCISCO

CHICAGO 443 S. DEARBORN ST.

We are the sole concessionaires of the original and only genuine Pasteur's Anthrax Vaccine discovered by Profs. Pasteur, Chamberland and Roux.

For the prevention of Anthrax or Charbon in horses, mules, cattle, sheep and goats. Introduced by us into this country in 1895 and successfully used by veterinarians on over 40,000,000 animals.

#### Antistrangles Serum

For the prevention and cure of true strangles in horses.

#### Antistreptococcic Serum (Veterinary)

Indicated in all conditions due to streptococcus infection; notably Influenza, Distemper, Shipping Fever, Purpura, Hemorrhagica or Equine Anasarca. Furnished in liquid and dry form, the latter keeping indefinitely.

#### Antitetanic Serum (Veterinary)

The most reliable cure for Tetanus and an infallible preventive of that disease. Furnished in liquid and dry form, the latter keeping indefinitely.

#### Mallein and Mallein Solution

For the diagnosis of Glanders in horses and mules. Mallein Solution is ready for use and is furnished in one, two and five-dose packages.

#### Tuberculin and Tuberculin Solution

For the diagnosis of Tuberculosis. Tuberculin Solution is ready for use as sold and is furnished in one, two and five-dose packages.

#### Antivenomous Serum

Exerts a specific action against the venom of all species of poisonous reptiles. In dry and liquid form.

#### Blackleg Vaccine, Powder Form

#### Blackleg Vaccine, Cord Form

#### Blackleg Vaccine, Pellet Form

We are the sole concessionaires of the original and only genuine Blackleg Vaccine for the prevention of Blackleg in Cattle.

Produced exclusively for us by the discoverers, Professors Arloing, Cornevin and Thomas' heritiers. Furnished in the powder, cord, and pellet form and the single and double treatment. The latter should be used whenever possible and invariably upon pure-bred, highly-graded, or valuable stock. Successfully used by veterinarians on over 36,000,000 head.

#### Canine Distemper Serum

Principally a curative agent for Canine Distemper. It also confers a limited immunity.

#### Polyvalent Calf Dysentery Serum.

#### Hog Cholera Serum.

#### Eucamphol

An ideal Antiseptic, Disinfectant and Germicide. It is a compound of Eucalyptus Oil, Camphor Oil and Cresol, and is indicated in daily practice.

#### Lincoln Disinfectant

For general and extensive disinfecting; compares favorably with any general disinfectant on the market.

#### Traumatol (Iodocresine)

A powerfully Antiseptic, Cicatrisant and non-toxic Microbicide. Furnished in Solution, Powder and Vaseline.

#### Pasteur Laboratories Rat Virus

For the scientific destruction of rats, mice and moles. Harmless to human beings, domestic animals, birds, etc.

# JUST PUBLISHED

## BOVINE TUBERCULOSIS

### AND ITS CONTROL

By VERANUS ALVA MOORE, B. S., M. D., V. M. D.

Professor of Comparative Pathology and Bacteriology,  
New York State Veterinary College, at Cornell University.

It has seemed for those who are intelligently working to eradicate this scourge, benefit would be derived from bringing together the results of the more important investigations on the nature, diagnosis and various methods for the control of this disease. It is well to keep in mind the words of the great Pasteur: "It is within the power of man to eliminate the infectious diseases from the face of the earth." To accomplish this for Tuberculosis requires full knowledge of its cause, morbid anatomy, means by which it is disseminated and methods for its control.

Pages X + 164 and 30 full page plates. Cloth. \$2.00 net Postpaid.  
The illustrations are unexcelled by those in any Medical Text-book.

## VETERINARY PUBLICATIONS

The Pathology and Differential Diagnosis of Infectious Diseases of Animals. Moore . . . . .	\$4.00
The Principles of Microbiology. Moore . . . . .	\$3.50
Veterinary Obstetrics. Williams . . . . .	\$8.00
Surgical and Obstetrical Operations. Williams . . . . .	\$2.50
Veterinarian's Handbook of Materia Medica and Therapeutics. Udall. . . . .	\$1.50
General Surgery. Frohner translated by Udall . . . . .	\$3.00
Veterinary Doses and Prescription Writing. Fish . . . . .	\$1.50
Examination of the Urine of the Horse and Man. Fish . . . . .	\$1.50
Elementary Exercises in Physiology. (Laboratory Manual) Fish . . . . .	\$1.50
Elementary Exercises in Materia Medica and Pharmacy. (Laboratory Manual) Fish . . . . .	\$1.50
The Clinical Pathology of the Blood of Domesticated Animals. Burnett . . . . .	\$2.50
Pure Milk and the Public Health. Ward . . . . .	\$2.00

ABOVE PRICES NET, POSTPAID

## CARPENTER & CO.

Ithaca, N. Y.

## RESTRAINT OF DOMESTIC ANIMALS.

### A Book for Students and Practitioners

By GEORGE R. WHITE, M. D., D. V. S., Nashville, Tenn.

Over 300 pages, with 339 illustrations made from drawings by one of the best pen artists in the United States. It illustrates and fully describes every known means of **RESTRAINT** of the Horse, Ox, Dog and Hog. This is by far the **best illustrated book** ever written in America on any branch of Veterinary Science. Published by the Author. For sale by all veterinary booksellers. Sent post or express prepaid to any address upon receipt of price.

"**Restraint of Domestic Animals**" has already been adopted as a **Text Book** in 18 of the 21 Veterinary Colleges of America. Its sale has been phenomenal.

Every practitioner should secure a copy for study and reference. **PRICE, \$3.75.**

## **Red • Ball • Brand • Stock • Food.**

Purely Vegetable. Not a Secret Preparation. List of Ingredients Sent to Veterinarians on Application.

Sold to Veterinary Surgeons in Bulk, they can make it into appropriate powders of 1 oz. to a dose.

The most Uniformly Successful Digestive Regulator Known.

Veterinarians throughout the country are using it and testifying to their successful treatment of digestive disorders.

Write for Circulars, Price List and Sample Package to

**ATKINS & DURBROW,**

160 PEARL STREET

NEW YORK.

## **THE BRADWOOD MANUFACTURING CO.**



MANUFACTURERS AND LESSORS OF

**THE HUMANE EQUINE OPERATING TABLE**

OFFICE & FACTORY 125 WATER ST. NEW HAVEN, CONN.

## **THE ST. JOSEPH VETERINARY COLLEGE**

**ST. JOSEPH, MO.**

Thoroughly modern and complete laboratory equipment, unexcelled clinical facilities. Over three thousand clinical cases used for instruction during the past session. Session of 1913 begins September 9. For prospectus and full information, address

**Dr. F. W. CALDWELL**

**7th and Sylvania Sts.**



## PHILLIPS VETERINARY SPECIALTIES.



Phillips "Perfected" Stomach Tube.  
Phillips Soft Rubber Catheter.  
Phillips "Continuous Stream" Injection Pump  
Phillips "Faultless" Decayed Root Extractor.

Beware of  
imitations  
and so-called  
Phillips  
Tubes.



### PHILLIPS "PERFECTED" STOMACH TUBE.

In the May, 1904, number of the AMERICAN VETERINARY REVIEW, I wrote an article introducing the operation of siphoning the stomach of the horse for the instant relief and positive cure of Stomach Flatulence, Acute Indigestion, Gastritis and Choke.

To insure the operation becoming a success in every surgeon's hands, I had a tube of superior quality manufactured, having correct dimensions, consistency and certain markings, and styled it THE PHILLIPS "PERFECTED."

The success of the operation is unquestionably proven by public demonstrations at State and International Meets, by the Veterinary Colleges teaching and recommending the operation, by imitations manufactured and sold by Veterinary Supply houses, by other tubes manufactured that are complicated in structure and difficult to pass, and proven also by the fact that most veterinary instrument dealers have made a stomach tube their leading add since one year after The Phillips "Perfected" had proven its success.

The Phillips "Perfected" Tube with the accompanying Stilet furnishes the Surgeon with the finest Probing ever offered to the profession. Directions for using accompany each tube. Price \$8.00, less dealers discount of 25%, \$6.00 Cash.

### PHILLIPS SOFT RUBBER CATHETER.

PHILLIPS SOFT RUBBER CATHETER IS OF SUPERIOR quality, four feet long. Neither heat nor cold affect it. Its life with constant usage is from five to ten years. Used as a Tourniquet in foot operations it has no equal. Directions for using and stilet accompany each catheter. Price \$1.75, less dealers discount of 25%, \$1.31 Cash.

### PHILLIPS "CONTINUOUS STREAM" PUMP.

PHILLIPS "CONTINUOUS STREAM" STOMACH AND RECTAL INJECTION PUMP is made of solid brass, nickel plated, simple of construction and easy acting. This pump should accompany every Phillips "Perfected" Tube. No one should practice siphoning the stomach without using an injection pump. Attached to the tube it makes an IDEAL RECTAL INJECTION outfit. Price \$8.00, less dealers discount of 30%, \$5.60 Cash.

### PHILLIPS "FAULTLESS" DECAYED TOOTH EXTRACTOR.

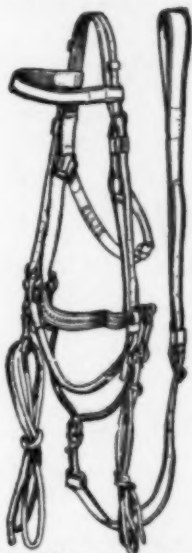
The only extractor that operates within the alveolar cavity. Made expressly for roots and shells. Price \$8.00, less dealers discount of 30%, \$5.60 Cash.

Send for circular for complete description of these Specialties.

Address all orders to, J. M. PHILLIPS, D. V. S.,

3732 WEST PINE BL'VD, ST. LOUIS, MO.

## "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1901.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with offsets, keeping the cheek pieces of the halter  $\frac{1}{4}$  to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

#### Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it inside the nose-band, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(For side lines, 5 yards sash-cord, cut in two, snaps on one end.)

Price of Halter, \$10.00. For further particulars address T. C. D. F., Hamilton Grange Branch, New York P. O.



# BACILLOL

has been approved in competent literature as a germicide and as the most economical disinfectant, antiseptic and deodorant, whose invariable composition is assured by constant scientific supervision. The fact that it will readily saponify is an absolutely reliable guarantee of its prompt germicidal effect which wholly distinguishes it from the soluble Cresols now in the market, in regard to which it is known that they will not saponify.

**Prof. Dr. Liebreich** says :

The strong disinfecting qualities and the relative non-poisonousness of Bacillol should alone be an inducement to employ it. Besides these merits it deserves mention that it is much more agreeable to manipulate with this preparation than with others of a similar kind, because it makes instruments and utensils less slippery. Also the smell of "Bacillol" disappears readily, which is certainly a quality of some consideration in the treatment of the sick, and particularly for midwifery.

These are features which distinguish "Bacillol" advantageously from other disinfectants, the more so as its economical side claims special attention.

## Bacillol Vaginal Preparations

are acknowledged to be a Specific against Vaginal Catarrh, an infectious disease (see "American Veterinary Review," No. 1, 1907), the modes of application being as follows :

### BACILLOL Vaginal Sticks

These are cut up, in accordance with the graduations, into pencils which can be easily handled and thus provide an economical treatment, more particularly for the live stock of large cattle owners.

### BACILLOL Vaginal Cartridges

are frequently given the preference, especially for saving time, because they are easily applied. Both modes of treatment insure the radical and prompt eradication of the infectious vaginal catarrh.

### BACILLOL Cartridges for Dysentery in Calves

have successfully stood the test as a remedy for the prevention of Dysentery in calves, applied by introducing a few cartridges into the genital canals of the brood animal shortly before calving. The simplest, most reliable and most economical treatment for the prevention of Dysentery in calves.

Obtainable in the trade and from  
**Bruno Grosche & Co.**  
4 & 6 Jones Lane, New York





# "CHINOSOL"

A MORE POWERFUL ANTISEPTIC  
THAN BICHLORIDE OF MERCURY

But

- 1 Non-poisonous
- 2 Does not coagulate albumin
- 3 Does no injury to membranes
- 4 Does no damage to tissues



- 5 Does not break down granulation
- 6 Causes no irritation
- 7 Has marked analgetic power
- 8 An instantaneous deodorant
- 9 Costs about three cents a quart

Sample and  
Full Literature  
on Request

CHINOSOL CO.  
PARMELE PHARMACAL CO.  
54 SOUTH ST., N. Y.

Abscesses

Inflamed  
Glands

Periostitis

Bog Spavin

Capped Knee

Infected  
Wounds

Harness  
Galls

Bruises



Burns

Distemper

Pneumonia

Caked Bag

Orchitis

Sprains

Scratches

Tendonitis

For Any Inflammatory Condition. Apply Hot and Thick  
Cover With Absorbent Cotton

Booklet and Spatula on Request

# NUCLEIN TABLETS

FOR HYPODERMATIC ADMINISTRATION.

## Valuable in Many Emergencies.

In the treatment of pneumonia, influenza, strangles, and febrile and allied diseases due to micro-organisms, Nuclein is an agent of proved reliability. It increases the number of white corpuscles in the blood, the germicidal power of which is thus magnified, and the ability of the animal to resist the disease is fortified or strengthened.

We manufacture **Hypodermatic Tablets of Nuclein**. *One tablet dissolved in 30 minims of water makes a 5-per-cent. Nuclein solution.* Any strength of solution desired may be made at a moment's notice by dissolving the required number of tablets in the requisite amount of water.

**Hypodermatic Tablets of Nuclein** are convenient, accurate and permanent. They are readily carried in the medicine-case. *Keep a supply on hand for emergencies.*

H. T. No. 553. Hypodermatic Tablets of Nuclein. Tubes of 10.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

## MCKILLIP VETERINARY COLLEGE, CHICAGO.

(CHARTERED 1892.)

**The faculty has been reorganized and strengthened by the addition of several specialists of national reputation.**

The equipment of this college is complete in every detail, furnishing the best opportunities for scientific and practical education.

**LARGEST PRACTICE IN THE WORLD.**

**Regular Graduate Course**, acquiring the degree of Doctor in Veterinary Medicine.

**Post-Graduate Course**, acquiring the degree of Doctor in Veterinary Medicine.

School opens September 11th, 1912.

Write for catalogue and other information

GEORGE B. MCKILLIP, M. D. V., Secretary,

No. 1639 Wabash Avenue, Chicago.

H



us  
sin  
tu  
th

Co  
Co

Ve  
Te

t  
-  
y  
o.





# Haussmann & Dunn Co.'s AUTO-CAUTERY

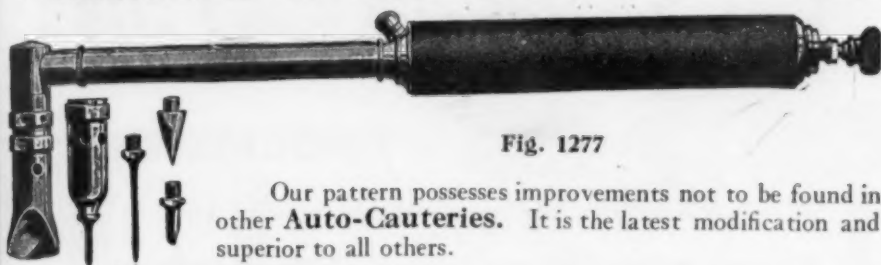


Fig. 1277

Our pattern possesses improvements not to be found in other **Auto-Cauteries**. It is the latest modification and superior to all others.

**Advantages.**—This instrument possesses many advantages over the usual forms of cauteries now in general use, the most important being its simplicity, ease of manipulation with one hand, and maintenance of temperature for nearly one hour, producing the maximum heating effect required for this mode of treatment. Full directions with each outfit.

WRITE FOR CATALOGUE

## PRICES

Complete in Cloth Roll with Alcohol Lamp and Wrench.....	\$15.00
With Ball Point Extra.....	16.50
Complete in Polished Wood Case with Alcohol Lamp, Wrench for Adjusting and 4-oz. G. S. M. C. Bottle for Ether.....	18.00
With Ball Point Extra.....	19.50

## HAUSSMANN & DUNN CO.

Veterinary Surgical Instruments  
Text Books and Supplies

708 S. Clark Street, Chicago.

"WHERE THERE IS PUS"

## Poly-Valent Bacterins

Successfully used in the treatment of abscesses, wire cuts, nail punctures, poll evil, fistulous withers, open joint, strangles, lymphangitis, cellulitis, septic arthritis, quittor, etc.  
6 ampules (2 c.c. each) in package \$1.00

## Influenza Vaccine

A dependable product of proven value, used as an immunizing and curative agent in the treatment of influenza, shipping fever, yards fever, acclimation fever, and febrile diseases of bacterial origin in horses and mules.

6 ampules (2 c.c. each) in package \$1.00

### Distemper Serum (canine)

A valuable prophylactic and immunizing agent.  
10 c.c. ampule, \$1.00.

### Distemper Bacterins (canine)

Used as a curative agent in conjunction with the "Distemper Serum."  
6 ampules 2 c.c. each \$1.00.

N. B.—The complete treatment containing one 10 c.c. ampule of the Distemper Serum and 6 ampules of the Distemper Bacterins, \$2.00.

## Accuracy Laboratories

1714 and 1716 West Madison Street

Chicago, Ill.

Painstaking comparisons made repeatedly  
by the most famous veterinarians of  
the world have established the fact that—

## **Glyco-Heroin (Smith)**

is decidedly the most reliable remedy for  
**COUGH, BRONCHITIS, LARYNGITIS AND PNEUMONIA**  
**IN HORSES, CATTLE OR DOGS**

Its action is more prompt than that of any  
other remedy, and no danger whatever attends  
its proper administration.

Glyco-Heroin (Smith) promptly checks  
cough, relieves suffocative breathing, liquefies  
bronchial and pulmonary exudations, allays  
fever, alleviates pain, overcomes nervousness  
and restores the appetite.

**DOSE:** For horses or cattle,  
one ounce every two or three  
hours. For dogs, from ten  
drops to one-half teaspoonful.

**SUBSTITUTION.** To insure entirely  
satisfactory results, it is necessary to em-  
phasize the name "Smith" when prescrib-  
ing, for many worthless imitations of Glyco-  
Heroin are dispensed by unscrupulous  
dealers.



**MARTIN H. SMITH COMPANY**  
**NEW YORK, N. Y. U. S. A.**

## HAVE A HAND IN RESERVE



With a rubber bulb cautery both hands are occupied. Save the annoyance of pumping. Guide the firing iron with one hand, leaving the other free.

### Dechery's Ether Cautery

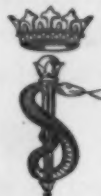
Is the apparatus for the veterinarian who wishes to HAVE A HAND READY for emergency.

Dechery's Ether Cautery, in wood case, with 4 firing points, combination wrench and ether bottle, net \$18.00  
In canvas pouch and without ether bottle, net. . . . 15.00

Like all products having our trade-mark, Dechery's Ether Cautery may be had from your local dealer, or

**The Kny-Scheerer Co.**

Manufacturers of Veterinary Instruments of Quality  
404-410 West 27th Street New York



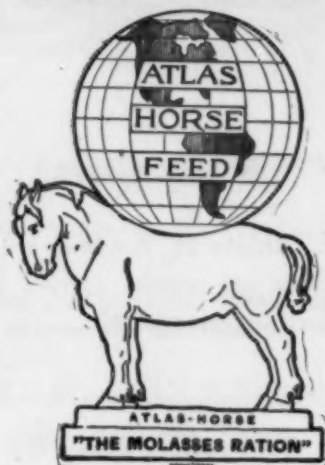
Trade-Mark

## ATLAS HORSE FEED

merits the veterinarian's thoughtful consideration.

### IT IS NOT

a medicine, nor a condimental food; neither does it contain any drugs or chemicals whatever, nor should it be confused with so called "patent feed."



### IT IS

a genuine molasses ration made on scientific principles and rich in pure Louisiana cane molasses. Highly nutritive, thoroughly digestible, and infinitely more convenient than mixing your own molasses feed.

Full particulars furnished upon application to

## The Meader-Atlas Co.

New York Office: 105 and 107 HUDSON STREET.

# Nuclein Tablets

FOR HYPODERMATIC ADMINISTRATION

---

## VALUABLE IN MANY EMERGENCIES

---

In the treatment of pneumonia, influenza, strangles, and febrile and allied diseases due to micro-organisms, Nuclein is an agent of proved reliability. It increases the number of white corpuscles in the blood, the germicidal power of which is thus magnified, and the ability of the animal to resist the disease is fortified or strengthened.



We manufacture **Hypodermatic Tablets of Nuclein.** *One tablet dissolved in 30 minims of water makes a 5-per-cent. Nuclein solution.* Any strength of solution desired may be made at a moment's notice by

dissolving the required number of tablets in the requisite amount of water.

**Hypodermatic Tablets of Nuclein** are convenient accurate and permanent. They are readily carried in the medicine-case. *Keep a supply on hand for emergencies.*

H. T. No. 553. Hypodermatic Tablets Nuclein. Tubes of 10.

---

## PARKE, DAVIS & COMPANY

Home Offices and Laboratories, Detroit, Mich.

# TALLIANINE

TRADE MARK REGISTERED.

Administered by intravenous injections through the jugular vein, and has been demonstrated to be the most rational and positive treatment for

PNEUMONIA of all forms and at all stages,  
PURPURA HEMORRHAGICA, PULMONARY CONGESTION,  
TYPHOID FEVER and allied diseases,  
INFLUENZA, SEPTICAEMIA, PYAEMIA and  
all septic conditions,  
DISTEMPER, SHIPPING FEVER, SUNSTROKE and  
HEAT EXHAUSTION.

Excellent results have also been obtained by its use in the treatment of Laryngitis, Thermic Fever, Pleurisy, Septic Metritis, Nephritis, Infectious Fever and Wet Eczema.

---

A TRIAL WILL CONVINCE THE MOST SKEPTICAL.

---

To be ordered from all druggists and veterinary supply dealers  
or from the sole agents.

**WALTER F. SYKES & CO.,**  
**85 WATER STREET, NEW YORK.**

132 Chestnut St., PHILADELPHIA, PA. 113 Broad St., BOSTON, MASS.

WESTERN AGENTS

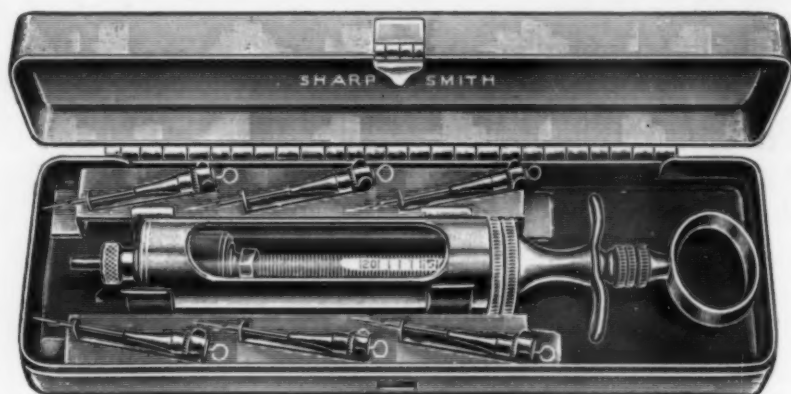
R. R. STREET & CO., 184 Washington Street, CHICAGO, ILLS.

DESCRIPTIVE MATTER SENT UPON REQUEST.



# **NYE PERFECTED HOG CHOLERA SYRINGES**

Extra Heavy, with Expanding Rubber Plunger, Heavy  
Glass Barrel and Screw Set Net for Regulating Dose



2 C C Syringes, graduated in $\frac{1}{4}$ C C for virulent blood injection, complete in metal case, with 4-16 gauge reinforced needles, price	\$3.00
2 C C Syringe, only, graduated in $\frac{1}{4}$ C C, no case or needles, each	1.50
20 C C Syringes, graduated in cubic centimeters, in leather covered case, with 6-16 gauge reinforced needles, price	4.00
20 C C Syringe, graduated in cubic centimeters in all metal aseptic case, with 6-16 gauge reinforced needles, price	5.50
20 C C Syringe, only, graduated in cubic centimeters, glass barrel, without case or needles, each	2.50
20 C C Syringe, graduated in cubic centimeters, all metal aseptic, with metal plunger in leather case, with 6-16 gauge reinforced needles	4.00
30 C C Syringe, graduated in cubic centimeters, with 6-16 gauge reinforced needles in leather covered case, price each	4.50
30 C C Syringe, graduated in cubic centimeters, in all-metal aseptic case, complete, with 6-16 gauge reinforced needles, each	6.00
30 C C Syringe, graduated in cubic centimeters, only, without case or needles, each	3.00
60 C C Syringes, graduated in 5 C C, complete in leather covered case, with 6-16 gauge reinforced needles, each	8.00
60 C C Syringe, graduated in 5 C C only, without case or needles, each	6.00
16-gauge reinforced needles for above Syringes, each	.25
Per dozen	2.25

Special prices in dozen and gross lots. Write for same.

## SHARP & SMITH

Manufacturers, Importers and Exporters of High Grade  
Veterinary Instruments and Supplies

**103 N. WABASH AVE.,**

**CHICAGO, ILL.**

UNITED STATES  
CANADA  
MEXICO  
WEST INDIES

GREAT BRITAIN  
IRELAND  
AUSTRALIA  
NEW ZEALAND

HAWAII  
PHILIPPINES  
INDIA  
SOUTH AFRICA

# M·A·C

MISTURA

ARGENTI

COMPOSITA



## THE MODERN TREATMENT

FOR SPLINTS, SPAVINS, CURBS, SIDE BONES, RING-  
BONES, QUITTOR, SHOE SOILS, OSSIFICATIONS, IN-  
FLAMED TENDONS, BURSA LAMENESS, ETC.

## ADVANTAGES

CAN BE APPLIED IN A FEW SECONDS.  
DOES NOT SOIL THE HANDS AS IT IS APPLIED  
WITH THE BRUSH WHICH ACCOMPANIES EACH  
BOTTLE.  
DOES NOT BLEMISH THE HORSE NOR INTER-  
FERE IN ANY WAY WITH HIS DAILY WORK.  
MORE PROMPT THAN BLISTERS IN EVERY CASE.  
IN ACUTE OR SUB-ACUTE CASES, BETTER THAN  
FIRING.

**SOLD ONLY TO VETERINARIANS**

OR ON THEIR ORDER

MANUFACTURED AND  
FULLY PROTECTED BY

**CARTER-LUFF CHEM. CO. HUDSON, N.Y.**

## PRICES TO THE PROFESSION (DELIVERED)

SINGLE BOTTLE	- - \$2.00	1/4 DOZEN	- - \$5.00
1/2 DOZEN	- - - \$8.00	ONE DOZEN	- \$15.00
TWO DOZEN	- - \$25.00		

NO DISCOUNTS IF ORDERED OF DEALERS.

A DIVIDEND OF ONE BOTTLE FREE WITH EACH 1-4 DOZEN, TWO FREE WITH  
1-2 DOZEN, FOUR FREE WITH ONE DOZEN, AND EIGHT FREE WITH TWO DOZEN  
WILL BE GIVEN IF THE ORDER IS SENT DIRECT TO THE MANUFACTURERS

**CARTER-LUFF CHEM. CO. HUDSON, N. Y.**

(OVER)

Handling Horses made easy by using the Veterinarian's  
Favorite Ambulance.



**RECH-MARBAKER CO.,**

**SPECIALISTS—DESIGNERS.**

**MAKERS OF HIGH GRADE AMBULANCES.**

**Girard Ave. and 8th St.,**

**PHILADELPHIA, PA.**

*Send for information and catalogue.*

**SERUMS :**

Tetanic  
 Streptococcic  
 Distemper and Influenza  
 Hog Cholera

**BACTERINS :**

Anti-Suppurine  
 Pneumonia  
 Streptocine  
 Influenza

**VACCINES :**


Anthrax  
 Black Leg  
 Hog Cholera

## ANTI-SUPPURINE

A polybacterial vaccine or bacterin for the treatment of Suppurating Conditions in Veterinary practice. Has been very extensively and successfully used since the spring of 1910.

In packages of 6 vials of 2 c. c., each, \$1.50; or \$15 per dozen packages.

In vials of 20 c. c., \$2; or \$20 per dozen.

 In liquid form ready for use.

## EUCAMPHINE

A compound of eucalyptus and camphor oils, cresylic acid, and saponaceous oils. Indications: Internally, whenever an antiseptic, antiperiodic, antiferment or antispasmodic is required. Externally, employed as a wash, douche, and dressing. High-class, agreeable and effective disinfectant and deodorant.

Pints,	\$ .50	Gallons,	\$3.00
5-pints,	\$2.00	2-gallons,	\$5.50
	5-gallons,		\$12.50

## GUAIALYPTOL

Eucamphine with Guaiacol. Indications:— All catarrhal affections of the respiratory and intestinal tracts, and notably for treatment of Laryngitis, Pharyngitis, Bronchitis, Oedema Glottidis, Influenza, Distemper, Strangles, Infectious Diarrhea, Septicemia, Gastric or Intestinal Flatulence, etc. It is also serviceable in Pneumonia.

Pints, \$ .75	5-pints, \$2.50	Gallons, \$4.00
---------------	-----------------	-----------------

 Ask for samples, and get acquainted with Eucamphine and Guaialyptol.

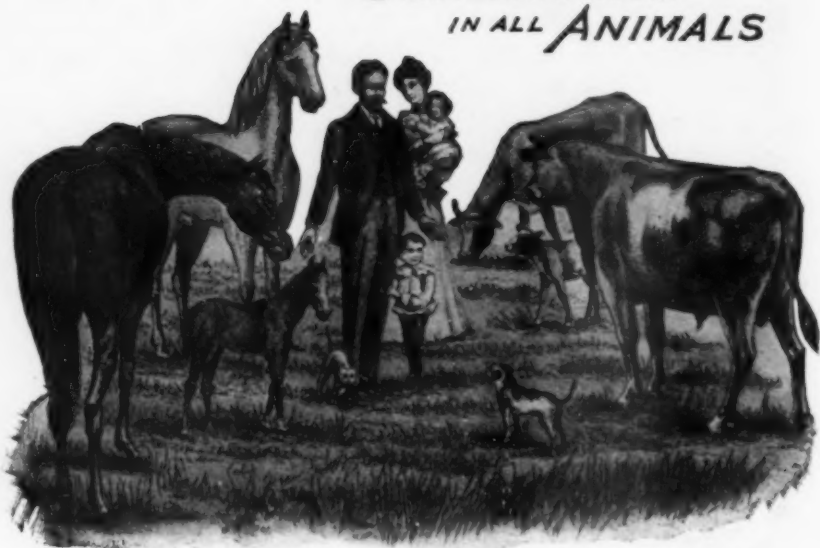
THE  
**SORBY VACCINE COMPANY**  
 CHICAGO, ILL.

Eastern Supply Depot  
**KALISH PHARMACY**  
 Twenty-third St. & Fourth Ave.  
 NEW YORK CITY

Missouri Valley Supply Depot  
**ST. JOSEPH VETERINARY**  
**LABORATORY**  
 ST. JOSEPH, MO.

# Sanmetto

FOR THE  
GENITO-URINARY  
CONDITIONS  
IN ALL ANIMALS



[The Tender-Hearted Veterinarian with Wife, Daughter and little Son in the midst of his Patients that seem to reciprocate his kindness.]

A POSITIVE REMEDY  
—IN—  
**DISEASES OF THE GENITO-URINARY ORGANS**  
—OF—  
**THE HORSE AND DOG AS WELL AS MAN**

Doctor, when you have a Horse or Dog suffering from Kidney, Bladder or Urethral Trouble; or from any Irritation or Inflammation of the Urinary Tract; or from Impotency or Sterility,

**ORDER SANMETTO**

Sanmetto is largely used in Veterinary Practice for the above troubles and has been found Worthy and Reliable. It is also strongly endorsed and much used in AZOTURIA—many cases reported cured with it. Sanmetto acts as a vitalizing tonic to the Genito-Urinary Organs. It is eliminated from the System almost entirely through the Kidneys and Bladder—hence its soothing, healing and tonic power upon the entire Urinary Tract.

To avoid substitution, order thus: **R, SANMETTO**—one bottle—original package.

**DOSE** :—For Horse, one ounce three times a day. For Dog, one teaspoonful three times a day.

**Price** One Bottle, \$1.00. Case of One Dozen Bottles, \$8.00. Sold by all Reliable Druggists  
Pamphlet on application to **OD CHEM. CO., New York.**

# MODERN

## VETERINARY MEDICINES OF MERIT

**ANTITETANIC SERUM** (von Behring) in accordance with the standardization of U. S. Government, in aseptic glass syringes of 1500 and 3000 immunizing units.

**BOVOVACCINE**, Prof. von Behring's immunizing antitubercular substance. "I cannot too strongly recommend vaccination, according to von Behring's method, to dairymen and breeders wishing to build up and maintain healthy herds." C. M. B.....D. V. S.

**DYMAL**, non-irritant, odorless, exsiccating, antiseptic powder; by diminishing wound secretion, it lessens danger of infection; specific in weeping eczema and burns.

**GALLOGEN**, a pure, intestinal astringent, indicated in scouring of road horses, enteritis, gastro-enteritis haemorrhagica, etc. "I have found it very efficacious in diarrhoea in canines even when found in connection with bloody discharge." J. A. McL.....D. V. S.

**LAVISOL**, a powerful antiseptic and disinfectant, non-irritant, stable, non-toxic, clearly soluble in water, safer than carbolic acid or bichloride of mercury, and twice as effective.

**TUBERCULIN**-Behringwerk, in concentrated form or ready for use; also for use according to the intracutaneous test.

**VALIDOL**, valerianic acid menthylester, an analeptic and sedative, indicated in the nervous form of canine distemper, collapse and vomiting in dogs and cats.

**VIOFORM**, haemostatic antiseptic powder, takes place of Iodoform without its odor.

CLINICAL THERMOMETERS  
HYPODERMIC SYRINGES

---

**C. BISCHOFF & CO. INC.,**  
451-453 Washington Street - - NEW YORK, N. Y.



## RELIABLE PREPARATIONS FOR THE VETERINARIAN

### CO. SOL. CRESOL.-MARTIN

(Contains 80% Pure Cresol)

A powerful concentrated antiseptic, antizymotic and germicide, when used in solutions of one-half to one per cent. strength. It forms a clear solution with all kinds of water, and is unsurpassed for all forms of surgical operations.

### CREOGEN-MARTIN

(The Veterinarians Antiseptic)

For many years this has been a standard pharmaceutical for the veterinary profession, and its wide range of usefulness in general practice has received the unqualified endorsement of the profession.

### CREOZOL-MARTIN

Prepared from standardized coal-tar creosote oil. Designed for dipping and disinfecting purposes in dealing with the diseases of livestock. Write for prices and full information on above preparations.

### MARTIN CHEMICAL CO.,

342-344 S. SCHUYLER AVE., KANKAKEE, ILLINOIS

# Veterinary Medicine

*Revised to Date. Standard and Worldwide in Comprehensiveness and Use*

By JAMES LAW, F.R.C.V.S.

Ex-Director N. Y. S. Vet. Coll. Emeritus. 50 years Teaching and Practice

*In 5 Vols. 8vo, 3277 pages*

- Vol. I.—Respiratory and Circulatory. New chapters on Blood and Lymph. pp. 557, \$4, 3d Ed., 1910.
- Vol. II.—Digestive, Hepatic, Tryptic. New chapters on Poisons, Ductless Glands, Hormones, Metabolism and Autointoxication. pp. 592, \$4, 3d Ed., 1911.
- Vol. III.—Nervous, Genitourinary, Eye, Skin, Systemic. pp. 611, \$4, 3d Ed., 1911.
- Vol. IV.—Microbian, Pestiferous, Prevention, Suppression, Exclusion, Micropathology, Serum Poisons, Serum Therapy, Immunization, etc. Scientific principles, general and specific. pp. 789, \$5, 3d Ed., 1912.
- Vol. V.—Parasites and Parasitism. Scientific Extinction. pp. 564, \$4, 2d Ed., 1909.

*Vol. IV. has General Index of Vols. I. to IV. 3d Ed.*

Order today from the author, ITHACA, N. Y.

Carriage paid on receipt of price.



- V/1441. **The Queen City Continuous Flow Injection and Suction Pump.** This pump is the best pump made for stomach tube, as it can be used for injection or suction, and is continuous flow. It is made of heavy brass throughout, heavily nickel plated, no parts to rust or get out of order. 16 in. long. **Special Price.** pump only . . . . . \$3 50
- V/1442. **Queen City Pump,** with six feet heavy, white, non-collapsible tubing and wood nozzle. **Special Price** . . . . . 5 00
- V/1443. **Queen City Pump,** with Woche's 10-foot maroon rubber Stomach Tube and Stilet. **Special** . . . . . 7 50

We carry a complete line of Auto-Cauteries, Roaring Instruments and many new designs of other instruments. Submit your wants to us.

*Complete Veterinary Catalogue sent Free upon request.*

## THE MAX WOCHER & SON CO.,

Manufacturers of High Grade Veterinary Instruments and Hospital Supplies.

19-21-23 6th AVE. WEST :: :: CINCINNATI, OHIO.

You will not be disappointed in the use of

# OUR ANTI-INFLUENZA VACCINE

Which has proved its efficiency in the prevention and cure of

## Influenza, Strangles and Shipping Fever

This VACCINE is of highest potency, is permanent, easily administered, and of moderate cost.

An **Ideal Preparation** for this important and widespread group of diseases, in its use you do not share in an experiment.

**PRICE**—Single Dose \$0.50; Four Doses \$1.50; Twelve Doses \$4.00

(Special quotations given for large quantities.)

## Beebe Biological Laboratories

(DR. W. L. BEEBE, Director)

ST. PAUL, MINN.

## COLLEGE TEXT BOOKS

"LEADERS—ALL OF THEM"

FREIDBERGER & FROHNER. Veterinary Pathology,	\$8.00
HOBDAV. Surgical Diseases of the Dog and Cat, . . .	3.25
PATON. Physiology for Veterinary Students, . . . .	3.00
KITT. Text Book of Comparative Veterinary Pathology,	4.00
JOWETT. Blood Serum Therapy, Preventive Inoculation and Toxins and Serum Diagnosis, . . . . .	1.75

### Our 1912 Catalogue of Veterinary Books

is now ready and is the most complete list of books on this subject ever issued. A copy will be sent FREE upon application.

In addition to our own publications, we carry the books of all of the other publishers. Upon receipt of the advertised price, all orders shipped promptly and *express charges prepaid*.

### CHICAGO MEDICAL BOOK COMPANY

Honore and Congress Streets, - - - - - CHICAGO

*Purchasers of the Veterinary Business of W. T. Keener & Co.*

## Air-Cushion Rubber Pads

IDEALISM IN HORSE-SHOEING.  
It follows closely nature's scheme  
in anatomy and physiology, and is  
therefore correct.



Many horses that are lame on  
any other pad or shoe will go sound  
on Air-Cushion Pads.  
There is a reason. "Write us."

Don't be deceived by inferior substitutes.

REVERE RUBBER CO., (Sole Mfrs.)

Boston, New York, Pittsburg,  
Chicago, New Orleans.

# LOCAL ANESTHESIA IS MADE EASY

BY

## Novocain and L-Suprarenin Synthetic Hypodermic Tablets

There are many conditions in which the Veterinarian can employ a LOCAL ANESTHETIC and these READY-TO-USE TABLETS offer him a non-toxic and powerfully efficient agent.

*A Trial will Readily Verify this Statement.*

Literature and Samples on Request

### FARBWERKE-HOECHST COMPANY

Successors to VICTOR KOECHL & CO.

H. A. METZ, Pres.

34 BEACH STREET, NEW YORK

## AMERICAN VETERINARY REVIEW.

A CORPS OF  
DISTINGUISHED  
COLLABORATORS

INCORPORATED  
A JOURNAL OF VETERINARY PROGRESS.

UNSURPASSED  
AS AN  
ADVERTISING  
MEDIUM.

EDITED BY  
A. Liantard, M.D.V.M. R. W. Ellis, D.V.S.

509 WEST 152d STREET, NEW YORK.

Subscription Price, \$3.00 per annum, Invariably in Advance;  
Students, \$2.00; Single Copies, 25 cents.

#### ADVERTISING RATES.

	1 Year.	6 Months.	3 Months.	1 Month.
Whole Page . . . . .	\$100.00	\$60.00	\$33.00	\$12.00
Half Page . . . . .	65.00	40.00	22.00	8.00
Quarter Page . . . . .	40.00	25.00	15.00	6.00
Eighth Page . . . . .	25.00	15.00	9.00	4.00

Preferred pages extra, and must be secured in advance. The best medium through which to reach the largest number of veterinarians of this and other countries. The oldest and most widely-circulated veterinary publication in America.

Address ROBT. W. ELLIS, Business Manager,  
509 West 152d Street, New York City.

## Two Important Books

### Winslow's 1913 **Materia Medica and Therapeutics**

Chapters on serum diagnosis, vaccine therapy, poisons and their antidotes, the use of all medicinal agents—and Dr. Winslow's extensive changes and additions—make the 1913 edition (published this month) of Winslow's "Veterinary Materia Medica and Therapeutics" a wholly new book through which other Materia's become virtually obsolete.

Have this Materia and you will need no other. It is the complete treatise. In its successive editions since 1901 it has been the textbook of all Colleges and the highest authority consulted by practitioners.

### Dollar's **Regional Surgery and Operative Technique**

John Dollar, President of the Royal College, is England's most eminent veterinary authority.

The well-known "Regional Veterinary Surgery" and "Operative Technique" are his books. He has now fused them into one big volume offered at much lower price, yet containing the same delineation of the elementary and fine points of surgery, revised throughout and enlarged to all recent developments in this Science, including interesting cases.

1115 pages of condensed specifications so clearly stated that *through them you cannot be unsuccessful in any known veterinary operation.*

**These Books Constitute Veterinary Science—**  
For they present all therapeutics and all surgical information necessary to a successful practice.  
**Postcard us for sample pages and contents.**

**William R. Jenkins Co.**  
**Publishers**

6th Ave. at 48th St.,

New York City

### COMPLETE VOLUMES OF REVIEW FOR SALE.

FOR SALE.—American Veterinary Review. Vols. 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, complete. Clean. \$15. S. R. Howard, Hillsboro, O.

### VETERINARY LOCATIONS:

Veterinary locations and practices handled in all states. Drug stores for sale and positions in drug stores. Nurses, physicians, dentists, furnished and located for practices. F. V. Kniest, R. P., No. 505 Bee Bldg., Omaha, Nebraska. Established 1904.

### PRACTICE FOR SAL

A well established practice in Southern New Hampshire. One hour and fifteen minutes' ride from Boston. Best of reasons for selling. Address F. H. S., care of American Veterinary Review, 509 W. 152d Street, New York, N. Y.

*WE DESIRE TO CALL TO YOUR NOTICE*

## VACCINE EQUINA-LINTZ

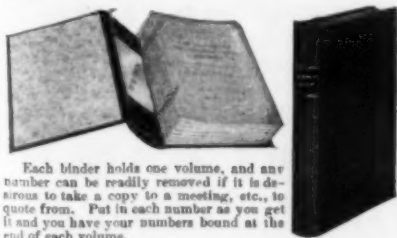
An absolutely specific vaccine for the treatment of  
**EQUINE DISTEMPER or SHIPPING FEVER**  
and sequela

**THE COMPARATIVE VACCINE LABORATORIES, INC.**

214 Livingston Street, Brooklyn, N. Y.

### THE "BIG BEN" BINDER

The binding of magazines in this binder is as easy as filling papers. No punching of holes is necessary. The bound matter opens flat to any page, even more so than a regularly bound book.



Each binder holds one volume, and any number can be readily removed if it is desired to take a copy to a meeting, etc., to quote from. Put in each number as you get it and you have your numbers bound at the end of each volume.

CLOTH WITH GOLD LETTERING, PRICE, \$1.00

Address **AMERICAN VETERINARY REVIEW**

509 WEST 152d ST., NEW YORK, N. Y.

## Just Enough

and just as they want it. The right way to salt animals is to let them help themselves.

### Compressed Pure-Salt Bricks

In our Patent Feeders, supply refined dairy salt. They mean animal thrift. They cost but little. Convenient for you and your animals suffer no neglect. Ask your dealer and write us for booklet.



Belmont  
Stable  
Supply Co.  
Paterson, N. J.  
Brooklyn,  
N. Y.



# INDIANA VETERINARY COLLEGE

CONFERS THE DEGREE OF

DOCTOR OF VETERINARY MEDICINE

Write for Catalogue

804 E. Market St. Indianapolis, Indiana

## NEW YORK STATE VETERINARY COLLEGE,

ESTABLISHED AT

CORNELL UNIVERSITY, ITHACA, N. Y.

BY CHAPTER 153, LAWS OF 1894.

This college is well equipped with modern facilities for scientific and practical instructions for undergraduates and post-graduates. Most varied practice for students in the free clinics. Regular graded course, three years of nine months each. Entrance by Regents' "Veterinary Student Certificate," or by examination, September 12th, 1913. Matriculation September 22d, 1913.

✻ ✻ ✻ Tuition Free to New York State Students.

For extended announcement address,

Professor VERANUS A. MOORE, Director.

## NEW YORK UNIVERSITY.

### New York-American Veterinary College.

(New York College of Veterinary Surgeons, chartered 1857, and the American Veterinary College, chartered 1875.)

Session 1912-1913 began September 26, 1912.

Write for New Catalogue and all information to

W. J. COATES, M.D., D.V.S., DEAN,

141 West 54th Street,

New York City.

## CHICAGO VETERINARY COLLEGE

2533, 2535, 2537 and 2539 State Street, Chicago, Ills.

Organized and Incorporated under the Laws of the State of Illinois, 1883.

Regular Session commences on or about September 15th in each year.

For Prospectus giving all information as to curriculum, fees, etc., address the President

JOSEPH HUGHES, M.R.C.V.S.,

2537 and 2539 State St., Chicago, Ills.

---

## VETERINARY COLLEGE OF THE ALABAMA POLYTECHNIC INSTITUTE

---

AUBURN, ALA.

---

Course three years of nine months each

Entrance requirements 12 high school units. The only Veterinary College in the South. Ideal place for students who wish to escape the rigorous winters of the North. Ample clinical material.

Tuition only \$20.00 a year for non-residents of Alabama

For Catalogue address

C. A. CARY, Dean

---

PULMONARY EMPHYSEMA, "BROKEN WIND,"  
"HEAVES," and all Bronchial Affections  
successfully treated with

# VERGOTININE

"A precious therapeutic product."

—Dr. Gambarotta, Royal Vet. School, Turin.

"The only product capable of ameliorating and curing that disease."—Dr. Bernaud, Chief Vet., Compagnie des Voitures Parisiennes l'Urbaine, Paris.

"An energetic reconstituent . . . and dynamic tonic."—Dr. H. Perrin, Chief Military Veterinarian.

VERGOTININE has been used very successfully in America for several years in the treatment of the above referred to conditions by a large number of veterinarians. Further particulars furnished on request.

Sole Distributors for United States, Canada and Mexico

PASTEUR LABORATORIES OF AMERICA

New York : 366-368 West 11th St. Chicago : 443-445 So. Dearborn St.

# PETROGEN—WYETH

---

A non-irritating, highly penetrating and soluble medium for the administration of medicaments which ordinarily prove difficult of use because of their irritating properties.

**Petrogen** is particularly well adapted for veterinary practice for the administration of iodine.

**Iodine-Petrogen** will cause no irritation or blistering, nor will its continued application result in a falling out of the hair, or cause any permanent staining.

**Iodine-Petrogen** is indicated in all forms of sprains, stiff joints, shoulder lameness, swellings, bone enlargements, and all conditions where a stimulating action on the glands and blood-vessels is required.

**Iodine-Petrogen** may be employed freely and indefinitely without producing the tendency to blister, which so often precludes entirely the use of the tincture of iodine.

---

LITERATURE AND SAMPLES OF IODINE-PETROGEN, OR OTHER PETROGEN COMBINATIONS, WILL BE SUPPLIED ON REQUEST

---

JOHN WYETH & BROTHER, Inc.

PHARMACEUTICAL CHEMISTS,

PHILADELPHIA

# THE MARK: "NORWICH"

Applied to remedies used in human and veterinary practice, carries with it the guarantee of excellence based on more than a quarter-century of successful manufacture and development of high-grade pharmaceuticals. This applies to our complete line of assayed fluid-extracts, tinctures, hypodermics, ointments, boluses, tablets, etc., as well as to our specialties.

## "A-V-C" BLISTER

Made from fresh, pure materials, according to the formula of the American Veterinary College, this gives results away ahead of mercuric iodide and cantharides preparations. Our facilities for manufacture enable us to offer this superior product at a low cost.

## VETRINOL POWDER

An ideal antiseptic and astringent dusting powder, approved by veterinarians as a superior dry dressing in burns, sores, cuts, wounds and other affections of the skin. It heals rapidly without causing irritation. Furnished in convenient sprinkler boxes.

## THE NORWICH PHARMACAL CO.

Laboratories and Main Offices: Norwich, New York

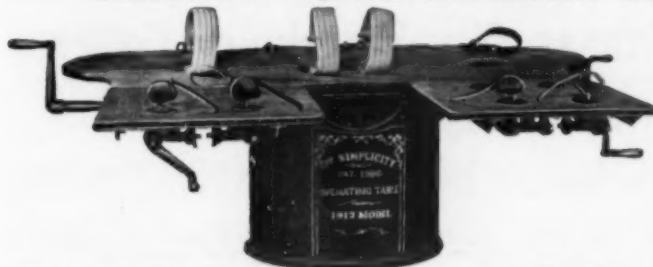
New York City Branch: 60 Beekman St., Corner Gold

Telephones: Beekman 3910 and 3911

Chicago Branch: 1100-1108 W. 37th St.

Kansas City Branch: 1424 Walnut St.

## SIMPLICITY EQUINE OPERATING TABLE



Has all movements necessary for all surgical operations.

The base rests on circular bearings enabling the operator to rotate the field of operation to the light.

By shifting a single lever, the table can be inverted, placing the patient in

position for inferiorly located operations, such as Umbilical Hernia, Scrotal Hernia, etc.

Conkey's Veterinary Supply House, Holland, Mich.

THERE IS NOTHING TO EQUAL

## SPRATT'S Dog Cakes and Puppy Biscuit



They are the best in the world and will keep your dog in good condition the year round.

If your puppies are doing "poorly" feed

## SPRATT'S MILK FOOD

Invaluable for weaning, for feeding brood bitches, invalid dogs, etc.

Write for samples and prices, and send 2 cent stamp for "Dog Culture," which contains valuable information.

**SPRATT'S PATENT LIMITED.**

FACTORY AND CHIEF OFFICES  
AT NEWARK, N. J.

# THE OHIO STATE UNIVERSITY

## COLLEGE OF VETERINARY MEDICINE

Columbus, O.

Offers a three year graded course leading to the degree of Doctor of Veterinary Medicine. Unexcelled laboratory and clinical facilities. New buildings especially designed for teaching veterinary medicine according to the most approved modern methods. Faculty of specialists devoting whole time to teaching. For College Bulletins address **DAVID S. WHITE, Dean.**

---

## THE GEORGE WASHINGTON UNIVERSITY

### College of Veterinary Medicine, Washington, D. C.

---

Offers a graded four year course leading to the degree of Doctor of Veterinary Medicine (D.V. M.), beginning with the session 1912-13.

This course is designed for well educated young men employed in the government service or elsewhere during the day. Lectures begin at 5. P. M.

School recognized by American Veterinary Medical Association, U. S. Civil Service Commission, U. S. Bureau of Animal Industry and State Examining Boards.

Clinics, hospitals, military posts, government laboratories and experiment stations located at the National Capital give students superior advantages in acquiring a broad education in veterinary science. For catalog, address

**DAVID E. BUCKINGHAM, V. M. D.**

Dean of Veterinary Faculty, 2113-15 FOURTEENTH ST., N. W.

---

## The Kansas City Veterinary College,

---

N. W. Corner 15th St. and Lydia Ave.

Kansas City, - - - Missouri.

A three year graded course. Daily clinical instruction. Excellent laboratory equipment. Graduates are eligible to membership in the American Veterinary Medical Association, also eligible to appointment as U. S. Veterinary Inspectors and as U. S. Army Veterinarians. . . .

**FOR CATALOGUE, ADDRESS**

**.... S. STEWART, Dean.**

---

## UNIVERSITY OF PENNSYLVANIA.

### SCHOOL OF VETERINARY MEDICINE.

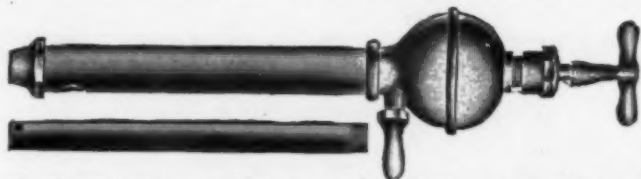
*The course of instruction is graded and extends over three years, with one session beginning the 4th Friday in September, and ending the 3d Wednesday in June in each year.*

Practical Instruction, including Laboratory Work in Pharmacy, Chemistry, General Biology, Histology, Physiology, Comparative Osteology, Dissecting, Botany, Pathology, Bacteriology, and Inspection of Meat and Milk, with personal care and treatment of animals in the hospitals and clinics, is a part of the regular course without additional expense.

Graduates of this school are eligible for membership in the American Veterinary Medical Association.

For Catalogue, Address **LOUIS A. KLEIN, V.M.D.,** Dean of Veterinary Faculty,  
Dept. F, Cor. 39th St. and Woodland Ave., Philadelphia.

## THE SIMPLEX CONTINUOUS FLOW PUMP



Is made of solid brass and nicely nickel plated. It is an actual continuous flow pump, simple

of construction and easy acting. Gives perfect satisfaction wherever used. Price \$5.25.

### Heavy Brass Dose Syringes

Nickel plated, 2 oz. size, with 2 pipes. \$1.00 each; half dozen, \$5.50; dozen, \$10.00.



New Standard Veterinary Thermometer, with ring to hold cord. Same as recommended by the B. A. I. Price 60c. each; dozen, \$6.00.

**FRANK S. BETZ CO., Hammond, Ind.**

*The Largest Manufacturer in the World of Veterinary, Surgical and Dental Instruments and Supplies. Write for Catalog.*

ESTABLISHED 1851.

INCORPORATED 1897.

## EIMER & AMEND, WHOLESALE DRUGGISTS,

205, 207, 209 and 211 THIRD AVENUE, NEW YORK CITY  
MAKE A SPECIALTY OF ALL

**Drugs, Extracts, Tinctures, Chemicals,  
Etc., Etc., Used in Veterinary Practice.**

**E. and A.'s VETERINARY GLYCERIN SUPPOSITORIES.  
SULFGLYCEROLE FOR SKIN LESIONS.  
SULFGLYCEROLE OINT. FOR SCRATCHES.**

SOLE AGENTS FOR  
**H. HAUPTNER, BERLIN, GERMANY,**  
VETERINARY INSTRUMENTS. Write for Catalogue !!!



PASTEUR-NEW YORK • CABLE ADDRESSES • PASTEUR-CHICAGO

PARIS • LONDON • HAVANA • MANILLA • MEXICO • MONTREAL • SIDNEY

# PASTEUR LABORATORIES

OF AMERICA  
BIOLOGICAL PRODUCTS

NEW YORK 366 368 WEST 117<sup>th</sup> ST.

SAN FRANCISCO

CHICAGO 4435, DEARBORN ST.

We are the sole concessionaires of the original and only genuine Pasteur's Anthrax Vaccine discovered by Profs. Pasteur, Chamberland and Roux.

For the prevention of Anthrax or Charbon in horses, cattle, sheep and goats. Introduced by us into this country in 1895 and successfully used by veterinarians on over 40,000,000 animals.

#### Antistrangles Serum

For the prevention and cure of true strangles in horses.

#### Antistreptococcic Serum (Veterinary)

Indicated in all conditions due to streptococcus infection; notably Influenza, Distemper, Shipping Fever, Purpura, Hemorrhagica or Equine Anasarca. Furnished in liquid and dry form, the latter keeping indefinitely.

#### Antitetanic Serum (Veterinary)

The most reliable cure for Tetanus and an infallible preventive of that disease. Furnished in liquid and dry form, the latter keeping indefinitely.

#### Mallein and Mallein Solution

For the diagnosis of Glanders in horses and mules. Mallein Solution is ready for use and is furnished in one, two and five-dose packages.

#### Tuberculin and Tuberculin Solution

For the diagnosis of Tuberculosis. Tuberculin Solution is ready for use as sold and is furnished in one, two and five-dose packages.

#### Antivenomous Serum

Exerts a specific action against the venom of all species of poisonous reptiles. In dry and liquid form.

#### Blackleg Vaccine, Powder Form

#### Blackleg Vaccine, Cord Form

#### Blackleg Vaccine, Pellet Form

We are the sole concessionaires of the original and only genuine Blackleg Vaccine for the prevention of Blackleg in Cattle.

Produced exclusively for us by the discoverers, Professors Arloing, Cornevin and Thomas' heritiers. Furnished in the powder, cord, and pellet form and the single and double treatment. The latter should be used whenever possible and invariably upon pure-bred, highly-graded, or valuable stock. Successfully used by veterinarians on over 36,000,000 head.

#### Canine Distemper Serum

Principally a curative agent for Canine Distemper. It also confers a limited immunity.

#### Polyvalent Calf Dysentery Serum.

#### Hog Cholera Serum.

#### Eucamphol

An ideal Antiseptic, Disinfectant and Germicide. It is a compound of Eucalyptus Oil, Camphor Oil and Cresol, and is indicated in daily practice.

#### Lincoln Disinfectant

For general and extensive disinfecting; compares favorably with any general disinfectant on the market.

#### Traumatol (Iodocresine)

A powerfully Antiseptic, Cicatrisant and non-toxic Microbicide. Furnished in Solution, Powder and Vaseline.

#### Pasteur Laboratories Rat Virus

For the scientific destruction of rats, mice and moles, Harmless to human beings, domestic animals, birds, etc.

# JUST PUBLISHED

## BOVINE TUBERCULOSIS AND ITS CONTROL

By VERANUS ALVA MOORE, B. S., M. D., V. M. D.

Professor of Comparative Pathology and Bacteriology,  
New York State Veterinary College, at Cornell University.

It has seemed for those who are intelligently working to eradicate this scourge, benefit would be derived from bringing together the results of the more important investigations on the nature, diagnosis and various methods for the control of this disease. It is well to keep in mind the words of the great Pasteur: "It is within the power of man to eliminate the infectious diseases from the face of the earth." To accomplish this for Tuberculosis requires full knowledge of its cause, morbid anatomy, means by which it is disseminated and methods for its control.

Pages X + 164 and 30 full page plates. Cloth. \$2.00 net Postpaid.

The illustrations are unexcelled by those in any Medical Text-book.

---

### VETERINARY PUBLICATIONS

<b>The Pathology and Differential Diagnosis of Infectious Diseases of Animals.</b>	<i>Moore</i>	\$4.00
<b>The Principles of Microbiology.</b>	<i>Moore</i>	\$3.50
<b>Veterinary Obstetrics.</b>	<i>Williams</i>	\$8.00
<b>Surgical and Obstetrical Operations.</b>	<i>Williams</i>	\$2.50
<b>Veterinarian's Handbook of Materia Medica and Therapeutics.</b>	<i>Udall</i>	\$1.50
<b>General Surgery.</b>	<i>Frohner</i> translated by <i>Udall</i>	\$3.00
<b>Veterinary Doses and Prescription Writing.</b>	<i>Fish</i>	\$1.50
<b>Examination of the Urine of the Horse and Man.</b>	<i>Fish</i>	\$1.50
<b>Elementary Exercises in Physiology. (Laboratory Manual)</b>	<i>Fish</i>	\$1.50
<b>Elementary Exercises in Materia Medica and Pharmacy. (Laboratory Manual)</b>	<i>Fish</i>	\$1.50
<b>The Clinical Pathology of the Blood of Domesticated Animals.</b>	<i>Burnett</i>	\$2.50
<b>Pure Milk and the Public Health.</b>	<i>Ward</i>	\$2.00

ABOVE PRICES NET, POSTPAID

## CARPENTER & CO.

Ithaca, N. Y.

## RESTRAINT OF DOMESTIC ANIMALS.

### A Book for Students and Practitioners

By GEORGE R. WHITE, M. D., D. V. S., Nashville, Tenn.

Over 300 pages, with 332 illustrations made from drawings by one of the best pen artists in the United States. It illustrates and fully describes every known means of **RESTRAINT** of the Horse, Ox, Dog and Hog. This is by far the **best illustrated book** ever written in America on any branch of Veterinary Science. Published by the Author. For sale by all veterinary booksellers. Sent post or express prepaid to any address upon receipt of price.

"**Restraint of Domestic Animals**" has already been adopted as a **Text Book** in 18 of the 21 Veterinary Colleges of America. Its sale has been phenomenal.

Every practitioner should secure a copy for study and reference. **PRICE, \$3.75.**

## Red • Ball • Brand • Stock • Food.

Purely Vegetable. Not a Secret Preparation. List of Ingredients Sent to Veterinarians on Application.

Sold to Veterinary Surgeons in Bulk, they can make it into appropriate powders of 1 oz. to a dose.

The most Uniformly Successful Digestive Regulator Known.

Veterinarians throughout the country are using it and testifying to their successful treatment of digestive disorders.

Write for Circulars, Price List and Sample Package to

**ATKINS & DURBROW,**

160 PEARL STREET

NEW YORK.

## THE BRADWOOD MANUFACTURING CO.



MANUFACTURERS AND LESSORS OF  
**THE HUMANE EQUINE OPERATING TABLE**

OFFICE & FACTORY 125 WATER ST. NEW HAVEN, CONN.

## THE ST. JOSEPH VETERINARY COLLEGE

ST. JOSEPH, MO.

Thoroughly modern and complete laboratory equipment, unexcelled clinical facilities. Over three thousand clinical cases used for instruction during the past session. Session of 1913 begins September 9. For prospectus and full information, address

**Dr. F. W. CALDWELL**

**7th and Sylvania Sts.**

## PHILLIPS VETERINARY SPECIALTIES.



Phillips "Perfected" Stomach Tube.  
Phillips Soft Rubber Catheter.  
Phillips "Continuous Stream" Injection Pump  
Phillips "Faultless" Decayed Root Extractor.

Beware of  
imitations  
and so-called  
Phillips  
Tubes.



### PHILLIPS "PERFECTED" STOMACH TUBE.

In the May, 1904, number of the AMERICAN VETERINARY REVIEW, I wrote an article introducing the operation of siphoning the stomach of the horse for the instant relief and positive cure of Stomach Flatulence, Acute Indigestion, Gastritis and Choke.

To insure the operation becoming a success in every surgeon's hands, I had a tube of superior quality manufactured, having correct dimensions, consistency and certain markings, and styled it THE PHILLIPS "PERFECTED."

The success of the operation is unquestionably proven by public demonstrations at State and International Meets, by the Veterinary Colleges teaching and recommending the operation, by imitations manufactured and sold by Veterinary Supply houses, by other tubes manufactured that are complicated in structure and difficult to pass, and proven also by the fact that most veterinary instrument dealers have made a stomach tube their leading add since one year after The Phillips "Perfected" had proven its success.

The Phillips "Perfected" Tube with the accompanying Stilet furnishes the Surgeon with the finest Probang ever offered to the profession. Directions for using accompany each tube. Price \$8.00, less dealers discount of 25%, \$6.00 Cash.

### PHILLIPS SOFT RUBBER CATHETER.

PHILLIPS SOFT RUBBER CATHETER IS OF SUPERIOR quality, four feet long. Neither heat nor cold affect it. Its life with constant usage is from five to ten years. Used as a Tourniquet in foot operations it has no equal. Directions for using and stilet accompany each catheter. Price \$1.75, less dealers discount of 25%, \$1.31 Cash.

### PHILLIPS "CONTINUOUS STREAM" PUMP.

PHILLIPS "CONTINUOUS STREAM" STOMACH AND RECTAL INJECTION PUMP is made of solid brass, nickel plated, simple of construction and easy acting. This pump should accompany every Phillips "Perfected" Tube. No one should practice siphoning the stomach without using an injection pump. Attached to the tube it makes an IDEAL RECTAL INJECTION outfit. Price \$8.00, less dealers discount of 30%, \$5.60 Cash.

### PHILLIPS "FAULTLESS" DECAYED TOOTH EXTRACTOR.

The only extractor that operates within the alveolar cavity. Made expressly for roots and shells. Price \$8.00, less dealers discount of 30%, \$5.60 Cash. Send for circular for complete description of these Specialties.

Address all orders to, J. M. PHILLIPS, D. V. S.,

3732 WEST PINE BL'VD, ST. LOUIS, MO.

## "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1902.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with offsets, keeping the cheek pieces of the halter  $\frac{3}{4}$  to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped, is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

#### Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it *inside the nose-band*, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(For side-lines, 5 yards sash-cord, cut in two, snaps on one end.)

Price of Halter, \$10.00. For further particulars address T. C. D. F., Hamilton Grange Branch, New York P. O.

# BACILLOL

has been approved in competent literature as a germicide and as the most economical disinfectant, antiseptic and deodorant, whose invariable composition is assured by constant scientific supervision. The fact that it will readily saponify is an absolutely reliable guarantee of its prompt germicidal effect which wholly distinguishes it from the soluble Cresols now in the market, in regard to which it is known that they will not saponify.

**Prof. Dr. Liebreich** says :

The strong disinfecting qualities and the relative non-poisonousness of Bacillol should alone be an inducement to employ it. Besides these merits it deserves mention that it is much more agreeable to manipulate with this preparation than with others of a similar kind, because it makes instruments and utensils less slippery. Also the smell of "Bacillol" disappears readily, which is certainly a quality of some consideration in the treatment of the sick, and particularly for midwifery.

These are features which distinguish "Bacillol" advantageously from other disinfectants, the more so as its economical side claims special attention.

## Bacillol Vaginal Preparations

are acknowledged to be a Specific against Vaginal Catarrh, an infectious disease (see "American Veterinary Review," No. 1, 1907), the modes of application being as follows :

### BACILLOL Vaginal Sticks

These are cut up, in accordance with the graduations, into pencils which can be easily handled and thus provide an economical treatment, more particularly for the live stock of large cattle owners.

### BACILLOL Vaginal Cartridges

are frequently given the preference, especially for saving time, because they are easily applied. Both modes of treatment insure the radical and prompt eradication of the infectious vaginal catarrh.

### BACILLOL Cartridges for Dysentery in Calves

have successfully stood the test as a remedy for the prevention of Dysentery in calves, applied by introducing a few cartridges into the genital canals of the brood animal shortly before calving. The simplest, most reliable and most economical treatment for the prevention of Dysentery in calves.

Obtainable in the trade and from  
**Bruno Grosche & Co.**  
4 & 6 Jones Lane, New York



'65

A  
TH

1

Samy  
Fall  
cc R



“C

A  
TH

2

Sam  
Full  
on R

# "CHINOSOL"

A MORE POWERFUL ANTISEPTIC  
THAN BICHLORIDE OF MERCURY

But

- 1 Non-poisonous
- 2 Does not coagulate albumin
- 3 Does no injury to membranes
- 4 Does no damage to tissues



- 5 Does not break down granulation
- 6 Causes no irritation
- 7 Has marked analgetic power
- 8 An instantaneous deodorant
- 9 Costs about three cents a quart

Sample and  
Full Literature  
on Request

CHINOSOL CO.  
PARMELE PHARMACAL CO.  
54 SOUTH ST., N. Y.

Abscesses

Inflamed  
Glands

Periostitis

Bog Spavin

Capped Knee

Infected  
Wounds

Harness  
Galls

Bruises



Burns

Distemper

Pneumonia

Caked Bag

Orchitis

Sprains

Scratches

Tendonitis

**For Any Inflammatory Condition. Apply Hot and Thick  
Cover With Absorbent Cotton**

Booklet and Spatula on Request

# **A Reliable Prophylactic and Curative Agent for Canine Distemper**

After years of experimental work in our Research Laboratories, we succeeded in isolating the germ of canine distemper—*bacillus bronchisepticus* (*bronchicanis*)—and from it prepared a true

## **CANINE DISTEMPER VACCINE**

which has elicited marked favor from veterinarians in all parts of the country.

We manufacture both curative and prophylactic preparations of **Canine Distemper Vaccine**. These vaccines have been exhaustively tested clinically. They have given unmistakable proof of therapeutic efficacy. We unhesitatingly commend them to the veterinary profession.

WRITE FOR LITERATURE ON CANINE DISTEMPER VACCINE.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

## **MCKILLIP VETERINARY COLLEGE, CHICAGO.**

(CHARTERED 1892.)

**The faculty has been reorganized and strengthened by the addition of several specialists of national reputation.**

The equipment of this college is complete in every detail, furnishing the best opportunities for scientific and practical education.

### **LARGEST PRACTICE IN THE WORLD.**

**Regular Graduate Course**, acquiring the degree of Doctor in Veterinary Medicine.

**Post-Graduate Course**, acquiring the degree of Doctor in Veterinary Medicine.

**School opens September 11th, 1912.**

Write for catalogue and other information

GEORGE B. MCKILLIP, M. D. V., Secretary,

No. 1639 Wabash Avenue, Chicago.





# Haussmann & Dunn Co.'s AUTO-CAUTERY

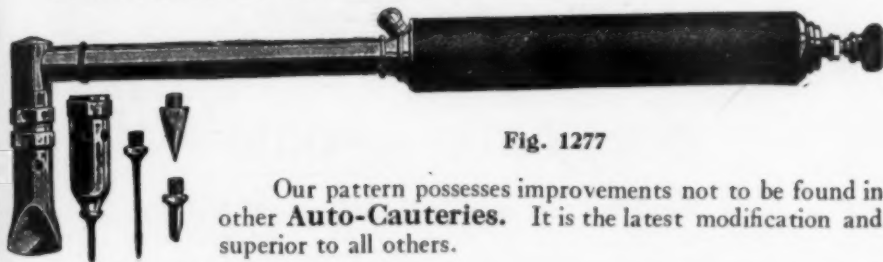


Fig. 1277

Our pattern possesses improvements not to be found in other **Auto-Cauteries**. It is the latest modification and superior to all others.

**Advantages.**—This instrument possesses many advantages over the usual forms of cauteries now in general use, the most important being its simplicity, ease of manipulation with one hand, and maintenance of temperature for nearly one hour, producing the maximum heating effect required for this mode of treatment. Full directions with each outfit.

WRITE FOR CATALOGUE

## PRICES

Complete in Cloth Roll with Alcohol Lamp and Wrench.....	\$15.00
With Ball Point Extra.....	16.50
Complete in Polished Wood Case with Alcohol Lamp, Wrench for Adjusting and 4-oz. G. S. M. C. Bottle for Ether.....	18.00
With Ball Point Extra.....	19.50

## HAUSSMANN & DUNN CO.

Veterinary Surgical Instruments  
Text Books and Supplies

708 S. Clark Street, Chicago.

"WHERE THERE IS PUS"

## Poly-Valent Bacterins

Successfully used in the treatment of abscesses, wire cuts, nail punctures, poll evil, fistulous withers, open joint, strangles, lymphangitis, cellulitis, septic arthritis, quittor, etc.  
6 ampules (2 c.c. each) in package \$1.00

## Influenza Vaccine

A dependable product of proven value, used as an immunizing and curative agent in the treatment of influenza, shipping fever, yards fever, acclimation fever, and febrile diseases of bacterial origin in horses and mules.  
6 ampules (2 c.c. each) in package \$1.00

### Distemper Serum (canine)

A valuable prophylactic and immunizing agent.  
10 c.c. ampule, \$1.00.

### Distemper Bacterins (canine)

Used as a curative agent in conjunction with the "Distemper Serum."  
6 ampules 2 c.c. each \$1.00.

N. B.—The complete treatment containing one 10 c.c. ampule of the Distemper Serum and 6 ampules of the Distemper Bacterins, \$2.00.

## Accuracy Laboratories

1714 and 1716 West Madison Street

Chicago, Ill.



Painstaking comparisons made repeatedly  
by the most famous veterinarians of  
the world have established the fact that—

## **Glyco-Heroin (Smith)**

is decidedly the most reliable remedy for

COUGH, BRONCHITIS, LARYNGITIS AND PNEUMONIA  
IN HORSES, CATTLE OR DOGS

Its action is more prompt than that of any  
other remedy, and no danger whatever attends  
its proper administration.

Glyco-Heroin (Smith) promptly checks  
cough, relieves suffocative breathing, liquefies  
bronchial and pulmonary exudations, allays  
fever, alleviates pain, overcomes nervousness  
and restores the appetite.

**DOSE:** For horses or cattle,  
one ounce every two or three  
hours. For dogs, from ten  
drops to one-half teaspoonful.

**SUBSTITUTION.** To insure entirely  
satisfactory results, it is necessary to em-  
phasize the name "Smith" when prescrib-  
ing, for many worthless imitations of Glyco-  
Heroin are dispensed by unscrupulous  
dealers.



**MARTIN H. SMITH COMPANY**  
NEW YORK, N. Y. U. S. A.

## MODERN VETERINARY MEDICINES OF MERIT

**DYMAL**, antiseptic, odorless, non-poisonous, non-irritating and siccative powder, indicated in cuts, lacerations, contusions, burns, weeping as well as dry eczema; applied as powder or ointment; an ideal substitute for iodoform.

**LAVISOL**, a powerful antiseptic and disinfectant, stable, non-toxic, clearly soluble in water, safer and more effective than carbolic acid or bichloride or mercury, of particular value in the different forms of mange.

**BOVOVACCINE**, Prof. von Behring's immunizing antitubercular substance, endorsed by members of the veterinary profession and successfully used by representative dairymen and breeders of cattle.

**TUBERCULIN** (Behringwerk).  
**GALLOGEN**

Intestinal astringent, antiseptic and germicide.

**CLINICAL THERMOMETERS**  
**HYPODERMIC SYRINGES**

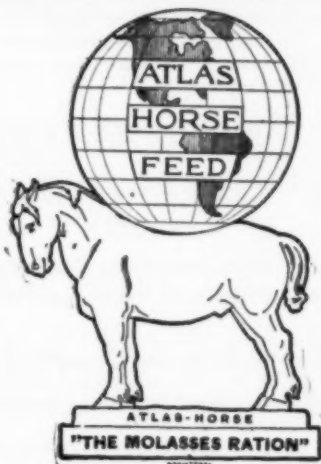
**ANTITETANIC SERUM**  
(von Behring), in ready-for-use syringes of 1,500 and 3,000 Units.

**VALIDOL**  
Analeptic and sedative in collapse and vomiting of dogs and cats.

**C. BISCHOFF & CO., Inc.**  
451-453 Washington Street, New York, N. Y.

## ATLAS HORSE FEED merits the veterinarian's thoughtful consideration.

**IT IS NOT**  
a medicine, nor a condimental food; neither does it contain any drugs or chemicals whatever, nor should it be confused with so called "patent feed."



**IT IS**  
a genuine molasses ration made on scientific principles and rich in pure Louisiana cane molasses. Highly nutritive, thoroughly digestible, and infinitely more convenient than mixing your own molasses feed.

*Full particulars furnished upon application to*

# The Meader-Atlas Co.

New York Office: 105 and 107 HUDSON STREET.

# We PROVED the Phylacogens

Before we placed a single dose of our Veterinary Phylacogens on the market, for more than a year our Veterinary Department of Experimental Medicine conducted a series of searching clinical tests of those products, submitting large quantities of both Phylacogens to skilled veterinarians in various parts of the United States.

Extensive experiments were also carried on under the personal supervision of our own veterinarians at various stock-yards and sale-stables in several large cities of the country.

Careful and complete records were kept of all cases treated. A summary of those records affords conclusive evidence of the therapeutic value of the Phylacogens.

♦ ♦ ♦

## PNEUMONIA PHYLACOGEN

(VETERINARY)

For intravenous and subcutaneous injection. Indicated in all cases of acute and chronic pneumonia and their complications.

In the preparation of **Pneumonia Phylacogen, Veterinary**, mixed cultures, including the *pyogenic staphylococci* and *streptococci*, *Bacillus coli communis* and *Bacillus pyocyaneus* of equine origin, are combined with cultures of *Diplococcus pneumoniae* and grown on suitable culture media, a number of strains of each organism being employed.

Bio. 950. Bottles of 30 Cc. Price per bottle, \$1.50.

## MIXED INFECTION PHYLACOGEN

(VETERINARY)

For intravenous and subcutaneous injection. Indicated in strangles, abscesses, quittor, fistula of the withers, poll evil, pyemic arthritis and all other suppurative conditions.

In the preparation of **Mixed Infection Phylacogen, Veterinary**, mixed cultures, including the *pyogenic staphylococci* and *streptococci*, *Bacillus coli communis* and *Bacillus pyocyaneus* of equine origin, are grown on suitable culture media, a number of strains of each organism being employed.

Bio. 960. Bottles of 30 Cc. Price per bottle, \$1.50.

Ask for Our Booklet on Veterinary Phylacogens.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

# TALLIANINE

TRADE MARK REGISTERED.

Administered by intravenous injections through the jugular vein, and has been demonstrated to be the most rational and positive treatment for

PNEUMONIA of all forms and at all stages,  
PURPURA HEMORRHAGICA, PULMONARY CONGESTION,  
TYPHOID FEVER and allied diseases,  
INFLUENZA, SEPTICAEMIA, PYAEMIA and  
all septic conditions,  
DISTEMPER, SHIPPING FEVER, SUNSTROKE and  
HEAT EXHAUSTION.

Excellent results have also been obtained by its use in the treatment of Laryngitis, Thermic Fever, Pleurisy, Septic Metritis, Nephritis, Infectious Fever and Wet Eczema.

---

A TRIAL WILL CONVINCE THE MOST SKEPTICAL.

---

To be ordered from all druggists and veterinary supply dealers  
or from the sole agents.

**WALTER F. SYKES & CO.,**  
**85 WATER STREET, NEW YORK.**

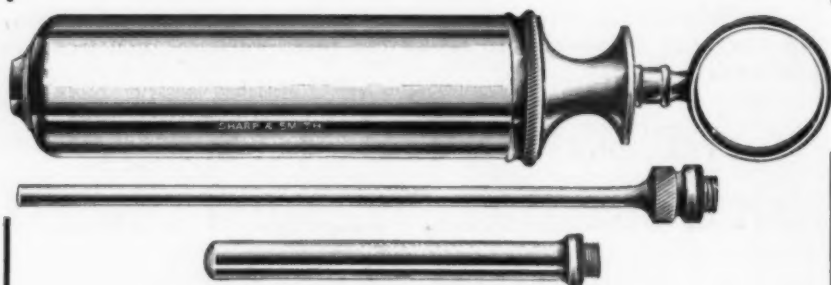
132 Chestnut St., PHILADELPHIA, PA. 113 Broad St., BOSTON, MASS.

WESTERN AGENTS

R. R. STREET & CO., 184 Washington Street, CHICAGO, ILLS.

DESCRIPTIVE MATTER SENT UPON REQUEST.

## EXTRA SPECIAL OFFER



Our 2-Ounce Extra Heavy Perfected Rounded End Heavy Double Leather Plunger, Nickel Plated Dose Syringes, with one 3" Heavy Dose Pipe and one 6" Quitter Pipe or one only 6" Heavy Dose Pipe, \$0.90 each, postage extra, 18 cents. \$4.50 per half dozen or \$8.00 per dozen, F. O. B., Chicago. Same Syringe with 9" Heavy Dose Pipe only \$1.00. each. \$5.00 per half dozen or \$8.50 per dozen. F. O. B., Chicago.

## FOR A LIMITED TIME ONLY



Our 5-inch Certified Magnifying Thermometers with Ball Bulb and Loops, each in hard rubber case for testing cattle as well as for every day use. Each, 60 cents. Per dozen, \$6.00

Same Thermometer except without Loop, but Ball Bulb, 50 cents each. \$5.00 per dozen.

Our 400 Page Veterinary Catalog "G," 10th edition and Supplement Free Postpaid on request.

## SHARP & SMITH

Manufacturers, Importers and Exporters of High Grade  
Veterinary Instruments and Supplies

103 N. WABASH AVE., CHICAGO, ILL.

UNITED STATES  
CANADA  
MEXICO  
WEST INDIES

GREAT BRITAIN  
IRELAND  
AUSTRALIA  
NEW ZEALAND

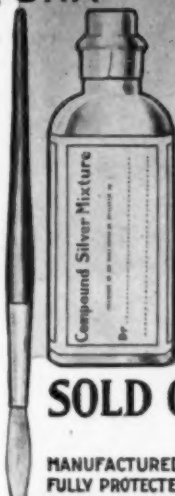
HAWAII  
PHILIPPINES  
INDIA  
SOUTH AFRICA

# M·A·C

MISTURA

ARGENTI

COMPOSITA



## THE MODERN TREATMENT

FOR SPLINTS, SPAVINS, CURBS, SIDE BONES, RING BONES, QUITTER, SHOE BOILS, OSSIFICATIONS, INFLAMED TENDONS, BURSAL LAMENESS, ETC.

## ADVANTAGES

CAN BE APPLIED IN A FEW SECONDS.  
DOES NOT SOIL THE HANDS AS IT IS APPLIED WITH THE BRUSH WHICH ACCOMPANIES EACH BOTTLE.  
DOES NOT SLEMISH THE HORSE NOR INTERFERE IN ANY WAY WITH HIS DAILY WORK.  
MORE PROMPT THAN BLISTERS IN EVERY CASE.  
IN ACUTE OR SUB-ACUTE CASES, BETTER THAN FIRING.

**SOLD ONLY TO VETERINARIANS**

OR ON THEIR ORDER

MANUFACTURED AND  
FULLY PROTECTED BY

**CARTER-LUFF CHEM. CO. HUDSON, N.Y.**

## PRICES TO THE PROFESSION (DELIVERED)

SINGLE BOTTLE	- - \$2.00	1/4 DOZEN	- - \$5.00
1/2 DOZEN	- - - \$8.00	ONE DOZEN	- \$15.00
TWO DOZEN	- - \$25.00		

NO DISCOUNTS IF ORDERED OF DEALERS.

A DIVIDEND OF ONE BOTTLE FREE WITH EACH 1-4 DOZEN, TWO FREE WITH 1-2 DOZEN, FOUR FREE WITH ONE DOZEN, AND EIGHT FREE WITH TWO DOZEN WILL BE GIVEN IF THE ORDER IS SENT DIRECT TO THE MANUFACTURERS

**CARTER-LUFF CHEM. CO. HUDSON, N. Y.**

(OVER) 6



Handling Horses made easy by using the Veterinarian's  
Favorite Ambulance.



**RECH-MARBAKER CO.,**

**SPECIALIST'S—DESIGNERS.**

**MAKERS OF HIGH GRADE AMBULANCES.**

**Girard Ave. and 8th St.,**

**PHILADELPHIA, PA.**

*Send for information and catalogue.*

**SERUMS :**

yetanic  
 Streptococcic  
 Distemper and Influenza  
 Hog Cholera

**BACTERINS :**

Anti-Suppurine  
 Pneumonia  
 Streptocine  
 Influenza

**VACCINES :**


Anthrax  
 Black Leg  
 Hog Cholera

# ANTI-SUPPURINE

A polybacterial vaccine or bacterin for the treatment of Suppurating Conditions in Veterinary practice. Has been very extensively and successfully used since the spring of 1910.

In packages of 6 vials of 2 c. c., each, \$1.50; or \$15 per dozen packages.

In vials of 20 c. c., \$2; or \$20 per dozen.

 In liquid form ready for use.

# EUCAMPHINE

A compound of eucalyptus and camphor oils, cresylic acid, and saponaceous oils. Indications: Internally, whenever an antiseptic, antiperiodic, antiferment or antispasmodic is required. Externally, employed as a wash, douche, and dressing. High-class, agreeable and effective disinfectant and deodorant.

Pints,	\$ .50	Gallons,	\$3.00
5-pints,	\$2.00	2-gallons,	\$5.50
		5-gallons,	\$12.50

# GUAIALYPTOL

Eucamphine with Guaiacol. Indications:— All catarrhal affections of the respiratory and intestinal tracts, and notably for treatment of Laryngitis, Pharyngitis, Bronchitis, Oedema Glottidis, Influenza, Distemper, Strangles, Infectious Diarrhea, Septicemia, Gastric or Intestinal Flatulence, etc. It is also serviceable in Pneumonia.

Pints, \$ .75	5-pints, \$2.50	Gallons, \$4.00
---------------	-----------------	-----------------

 Ask for samples, and get acquainted with Eucamphine and Gualalyptol.

THE  
**SORBY VACCINE COMPANY**  
 CHICAGO, ILL.

Eastern Supply Depot

**KALISH PHARMACY**

Twenty-third St. & Fourth Ave.

NEW YORK CITY

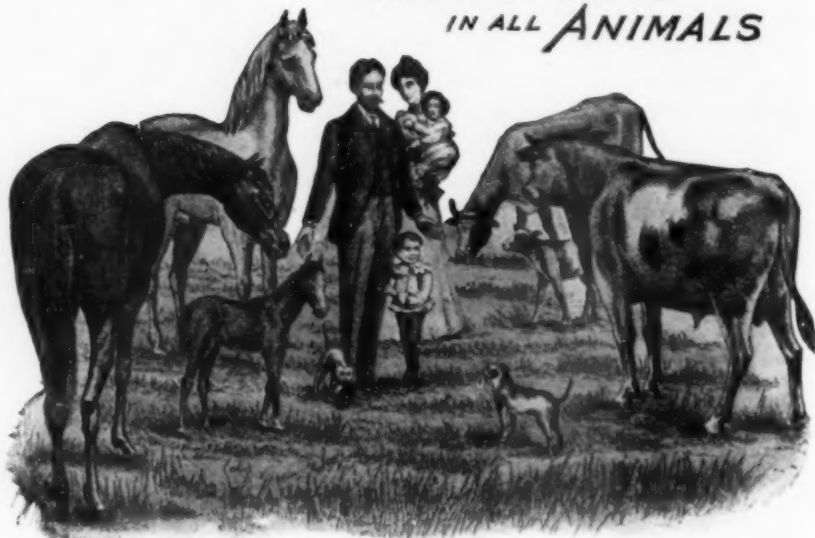
Missouri Valley Supply Depot

**ST. JOSEPH VETERINARY  
LABORATORY**

ST. JOSEPH, MO.

# Sanmetto

FOR THE  
GENITO-URINARY  
CONDITIONS  
IN ALL ANIMALS



[The Tender-Hearted Veterinarian with Wife, Daughter and little Son in the midst of his Patients that seem to reciprocate his kindness.]

A POSITIVE REMEDY  
—IN—  
**DISEASES OF THE GENITO-URINARY ORGANS**  
—OF—  
**THE HORSE AND DOG AS WELL AS MAN**

Doctor, when you have a Horse or Dog suffering from Kidney, Bladder or Urethral Trouble; or from any Irritation or Inflammation of the Urinary Tract; or from Impotency or Sterility,

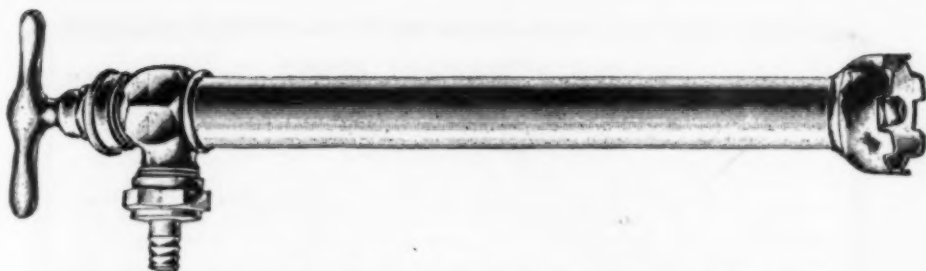
**ORDER SANMETTO**

Sanmetto is largely used in Veterinary Practice for the above troubles and has been found Worthy and Reliable. It is also strongly endorsed and much used in AZOTURIA—many cases reported cured with it. Sanmetto acts as a vitalizing tonic to the Genito-Urinary Organs. It is eliminated from the System almost entirely through the Kidneys and Bladder—hence its soothing, healing and tonic power upon the entire Urinary Tract.

To avoid substitution, order thus: R, SANMETTO—one bottle—original package.

DOSE:—For Horse, one ounce three times a day. For Dog, one teaspoonful three times a day.

Price One Bottle, \$1.00. Case of One Dozen Bottles, \$8.00. Sold by all Reliable Druggists  
Pamphlet on application to **OD CHEM. CO., New York.**



- V/1441. **The Queen City Continuous Flow Injection and Suction Pump.** This pump is the best pump made for stomach tube, as it can be used for injection or suction, and is continuous flow. It is made of heavy brass throughout, heavily nickel plated, no parts to rust or get out of order. 16 in. long. **Special Price.** pump only . . . . . \$3 50
- V/1442. **Queen City Pump,** with six feet heavy, white, non-collapsible tubing and wood nozzle. **Special Price** . . . . . 5 00
- V/1443. **Queen City Pump,** with Woche's 10-foot maroon rubber Stomach Tube and Stilet. **Special** . . . . . 7 50

We carry a complete line of Auto-Cauteries, Roaring Instruments and many new designs of other instruments. Submit your wants to us.

*Complete Veterinary Catalogue sent Free upon request.*

## THE MAX WOCHER & SON CO.,

Manufacturers of High Grade Veterinary Instruments and Hospital Supplies.

19-21-23 6th AVE. WEST :: :: CINCINNATI, OHIO.

You will not be disappointed in the use of

# OUR ANTI-INFLUENZA VACCINE

Which has proved its efficiency in the prevention and cure of

## Influenza, Strangles and Shipping Fever

This VACCINE is of highest potency, is permanent, easily administered, and of moderate cost.

An Ideal Preparation for this important and widespread group of diseases, in its use you do not share in an experiment.

PRICE—Single Dose \$0.50; Four Doses \$1.50; Twelve Doses \$4.00

(Special quotations given for large quantities.)

## Beebe Biological Laboratories

(DR. W. L. BEEBE, Director)

ST. PAUL, MINN.

NEW VETERINARY BOOKS  
A SYSTEM OF VETERINARY MEDICINE

By various writers. Edited by  
E. WALLIS HOARE, F.R.C.V.S.

To be complete in two handsome volumes. Volume 1 is now ready, 1366 pages, half leather. Price for the set, for advance orders, **\$15.00 delivered.** (Terms: \$7.50 upon delivery of first volume; \$7.50 when volume 2 is ready.)

NOW COMPLETE  
Special Pathology and Therapeutics of Domestic Animals

By HUTYRA & MAREK

Two royal octavo volumes, 2151 pages, profusely illustrated, half leather binding, per set **\$15.00 delivered.**

Send For Our Complete Catalogue of Veterinary Books

In addition to our own publications, we carry in stock the books of all the other publishers. EXPRESS CHARGES, PREPAID ON ALL ORDERS.

CHICAGO MEDICAL BOOK COMPANY

Honore and Congress Streets, - - - CHICAGO

# Air-Cushion Rubber Pads

IDEALISM IN HORSE-SHOEING.  
It follows closely nature's scheme in anatomy and physiology, and is therefore correct.



Many horses that are lame on any other pad or shoe will go sound on Air-Cushion Pads.  
There is a reason. "Write us."

Don't be deceived by inferior substitutes.

REVERE RUBBER CO., (Sole Mfrs.)

Boston, New York, Pittsburg,  
Chicago, New Orleans.

## RELIABLE PREPARATIONS FOR THE VETERINARIAN

### CO. SOL. CRESOL-MARTIN

(Contains 80% Pure Cresol)

A powerful concentrated antiseptic, antizymotic and germicide, when used in solutions of one-half to one per cent. strength. It forms a clear solution with all kinds of water, and is unsurpassed for all forms of surgical operations.

### CREOGEN-MARTIN

(The Veterinarians Antiseptic)

For many years this has been a standard pharmaceutical for the veterinary profession, and its wide range of usefulness in general practice has received the unqualified endorsement of the profession.

### CREOZOL-MARTIN

Prepared from standardized coal-tar creosote oil. Designed for dipping and disinfecting purposes in dealing with the diseases of livestock. Write for prices and full information on above preparations.

### MARTIN CHEMICAL CO.,

342-344 S. SCHUYLER AVE., KANKAKEE, ILLINOIS

# Veterinary Medicine

*Revised to Date. Standard and Worldwide in Comprehensiveness and Use*

By JAMES LAW, F.R.C.V.S.

Ex-Director N. Y. S. Vet. Coll. Emeritus. 50 years Teaching and Practice

*In 5 Vols. 8vo, 3277 pages*

- Vol. I.—Respiratory and Circulatory. New chapters on Blood and Lymph. pp. 557, \$4, 3d Ed., 1910.
- Vol. II.—Digestive, Hepatic, Tryptic. New chapters on Poisons, Ductless Glands, Hormones, Metabolism and Autointoxication. pp. 592, \$4, 3d Ed., 1911.
- Vol. III.—Nervous, Genitourinary, Eye, Skin, Systemic. pp. 611, \$4, 3d Ed., 1911.
- Vol. IV.—Microbian, Pestiferous, Prevention, Suppression, Exclusion, Micropathology, Serum Poisons, Serum Therapy, Immunization, etc. Scientific principles, general and specific. pp. 789, \$5, 3d Ed., 1912.
- Vol. V.—Parasites and Parasitism. Scientific Extinction. pp. 564, \$4, 2d Ed., 1909.

*Vol. IV. has General Index of Vols. I. to IV. 3d Ed.*

Order today from the author, ITHACA, N. Y.

Carriage paid on receipt of price.



## Two Important Books

### Winslow's 1913 **Materia Medica and Therapeutics**

Chapters on serum diagnosis, vaccine therapy, poisons and their antidotes, the use of all medicinal agents—and Dr. Winslow's extensive changes and additions—make the 1913 edition (published this month) of Winslow's "Veterinary Materia Medica and Therapeutics" a wholly new book through which other Materia's become virtually obsolete.

Have this Materia and you will need no other. It is the complete treatise. In its successive editions since 1901 it has been the textbook of all Colleges and the highest authority consulted by practitioners.

### Dollar's **Regional Surgery and Operative Technique**

John Dollar, President of the Royal College, is England's most eminent veterinary authority.

The well-known "Regional Veterinary Surgery" and "Operative Technique" are his books. He has now fused them into one big volume offered at much lower price, yet containing the same delineation of the elementary and fine points of surgery, revised throughout and enlarged to all recent developments in this Science, including interesting cases.

1115 pages of condensed specifications so clearly stated that *through them you cannot be unsuccessful in any known veterinary operation.*

**These Books Constitute Veterinary Science—**  
For they present all therapeutics and all surgical  
information necessary to a successful practice.  
**Postcard us for sample pages and contents.**

**William R. Jenkins Co.**  
**Publishers**

6th Ave. at 48th St.,

New York City

### COMPLETE VOLUMES OF REVIEW FOR SALE.

FOR SALE.—American Veterinary Review. Vols. 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, complete. Clean. \$15. S. R. Howard, Hillsboro, O.

### VETERINARY LOCATIONS:

Veterinary locations and practices handled in all states. Drug stores for sale and positions in drug stores. Nurses, physicians, dentists, furnished and located for practices. F. V. Kniest, R. P., No. 505 Bee Bldg., Omaha, Nebraska. Established 1904.

### ASSISTANT WANTED.

In a high-class mixed practice; must be licensed in New York State; capable and reliable man of experience preferred; permanent position for right man. Address "G," care American Veterinary Review, 509 W. 152d St., New York.

## A YEAR OF UNPARALLELED SUCCESS

**VACCINE EQUINA.**—The only Specific Vaccine for EQUINE DISTEMPER, Etc., and PNEUMONIA. Immunizing and curative.

**VACCINE AGGRESSIN-MIXED.**—Indicated in Pus-forming conditions generally; also Laryngitis and Pharyngitis.

**DOG DISTEMPER VACCINE.**—Immunizing and curative.

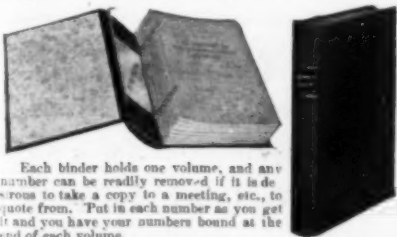
## THE COMPARATIVE VACCINE LABORATORIES, Inc.

Literature on request.

214 Livingston Street, Brooklyn, N. Y.

### THE "BIG BEN" BINDER

The binding of magazines in this binder is as easy as filing papers. No punching of holes is necessary. The bound matter opens flat to any page, even more so than a regularly bound book.



Each binder holds one volume, and any number can be readily removed if it is desired to take a copy to a meeting, etc., to quote from. Put in each number as you get it and you have your numbers bound as the end of each volume.

CLOTH WITH GOLD LETTERING, PRICE, \$1.00

Address AMERICAN VETERINARY REVIEW

509 WEST 152d ST., NEW YORK, N. Y.

## Just Enough

and just as they want it. The right way to salt animals is to let them help themselves.

### Compressed Pure-Salt Bricks

In our Patent Feeders, supply refined dairy salt. They mean animal thrift. They cost but little.

Convenient for you and your animals suffer no neglect. Ask your dealer and write us for booklet.



Selmont  
Stable  
Supply Co.  
Patentee, Mfrs.  
Brooklyn,  
N. Y.

# **INDIANA VETERINARY COLLEGE**

CONFERS THE DEGREE OF

**DOCTOR OF VETERINARY MEDICINE**

Write for Catalogue

804 E. Market St.

Indianapolis, Indiana

## **NEW YORK STATE VETERINARY COLLEGE,**

ESTABLISHED AT

**CORNELL UNIVERSITY, ITHACA, N. Y.**

BY CHAPTER 153, LAWS OF 1894.

This college is well equipped with modern facilities for scientific and practical instructions for undergraduates and post-graduates. Most varied practice for students in the free clinics. Regular graded course, three years of nine months each. Entrance by Regents' "Veterinary Student Certificate," or by examination, September 12th, 1913. Matriculation September 22d, 1913.

✻ ✻ ✻ Tuition Free to New York State Students.

For extended announcement address,

Professor VERANUS A. MOORE, Director.

## **VETERINARY COLLEGE OF THE ALABAMA POLYTECHNIC INSTITUTE**

AUBURN, ALA.

Course three years of nine months each

Entrance requirements 12 high school units. The only Veterinary College in the South. Ideal place for students who wish to escape the rigorous winters of the North. Ample clinical material.

Tuition only \$20.00 a year for non-residents of Alabama

For Catalogue address

C. A. CARY, Dean

## **CHICAGO VETERINARY COLLEGE**

2533, 2535, 2537 and 2539 State Street, Chicago, Ills.

Organized and Incorporated under the Laws of the State of Illinois, 1883.

Regular Session commences on or about September 15th in each year.

For Prospectus giving all information as to curriculum, fees, etc., address the President

JOSEPH HUGHES, M.R.C.V.S.,

2537 and 2539 State St., Chicago, Ills.

# **New York State Veterinary College**

Established at

**New York University in the City of New York**

By Chapter 676 Laws of 1913

**FORMERLY NEW YORK-AMERICAN VETERINARY COLLEGE**

(New York College of Veterinary Surgeons, Chartered 1857, and  
American Veterinary College, Chartered 1875).

**SESSION 1913-1914 BEGINS SEPTEMBER, 1913**

Free Scholarship to One Student from each Assembly District

**Laboratory Facilities and Clinical Advantages Unequalled**

Write for New Catalogue and All Information to

**W. J. COATES, M.D., D.V.S., Dean**

141 West 54th Street

New York City

---

**PULMONARY EMPHYSEMA, "BROKEN WIND,"  
"HEAVES," and all Bronchial Affections  
successfully treated with**

## **VERGOTININE**

"A precious therapeutic product."

—Dr. Gambarotta, Royal Vet. School. Turin.

"The only product capable of ameliorating and curing that disease."—Dr. Bernaud, Chief Vet., Compagnie des Voitures Parisiennes l'Urbaine, Paris.

"An energetic reconstituent . . . and dynamic tonic."—Dr. H. Perrin, Chief Military Veterinarian.

---

**VERGOTININE** has been used very successfully in America for several years in the treatment of the above referred to conditions by a large number of veterinarians. Further particulars furnished on request.

---

Sole Distributers for United States, Canada and Mexico

**PASTEUR LABORATORIES OF AMERICA**

New York : 366-368 West 11th St. Chicago : 443-445 So. Dearborn St.

# PETROGEN—WYETH

---

A non-irritating, highly penetrating and soluble medium for the administration of medicaments which ordinarily prove difficult of use because of their irritating properties.

**Petrogen** is particularly well adapted for veterinary practice for the administration of iodine.

**Iodine=Petrogen** will cause no irritation or blistering, nor will its continued application result in a falling out of the hair, or cause any permanent staining.

**Iodine=Petrogen** is indicated in all forms of sprains, stiff joints, shoulder lameness, swellings, bone enlargements, and all conditions where a stimulating action on the glands and blood-vessels is required.

**Iodine=Petrogen** may be employed freely and indefinitely without producing the tendency to blister, which so often precludes entirely the use of the tincture of iodine.

---

LITERATURE AND SAMPLES OF IODINE-PETROGEN, OR OTHER PETROGEN COMBINATIONS, WILL BE SUPPLIED ON REQUEST

---

JOHN WYETH & BROTHER, Inc.

PHARMACEUTICAL CHEMISTS,

PHILADELPHIA

# THE MARK: "NORWICH"

Applied to remedies used in human and veterinary practice, carries with it the guarantee of excellence based on more than a quarter-century of successful manufacture and development of high-grade pharmaceuticals. This applies to our complete line of assayed fluid-extracts, tinctures, hypodermics, ointments, boluses, tablets, etc., as well as to our specialties.

## "A-V-C" BLISTER

Made from fresh, pure materials, according to the formula of the American Veterinary College, this gives results away ahead of mercuric iodide and cantharides preparations. Our facilities for manufacture enable us to offer this superior product at a low cost.

## VETRINOL POWDER

An ideal antiseptic and astringent dusting powder, approved by veterinarians as a superior dry dressing in burns, sores, cuts, wounds and other affections of the skin. It heals rapidly without causing irritation. Furnished in convenient sprinkler boxes.

## THE NORWICH PHARMACAL CO.

Laboratories and Main Offices: Norwich, New York

New York City Branch: 60 Beekman St., Corner Gold

Telephones: Beekman 3910 and 3911

Chicago Branch: 1100-1108 W. 37th St.

Kansas City Branch: 1424 Walnut St.

## SIMPLICITY EQUINE OPERATING TABLE



Has all movements necessary for all surgical operations.

The base rests on circular bearings enabling the operator to rotate the field of operation to the light.

By shifting a single lever, the table can be inverted, placing the patient in

position for inferiorly located operations, such as Umbilical Hernia, Scrotal Hernia, etc.

Conkey's Veterinary Supply House, Holland, Mich.

THERE IS NOTHING TO EQUAL

## SPRATT'S Dog Cakes and Puppy Biscuit



They are the best in the world and will keep your dog in good condition the year round.

If your puppies are doing "poorly" feed

## SPRATT'S MILK FOOD

Invaluable for weaning, for feeding brood bitches, invalid dogs, etc.

Write for samples and prices, and send 2 cent stamp for "Dog Culture," which contains valuable information.

**SPRATT'S PATENT LIMITED.**

FACTORY AND CHIEF OFFICES  
AT NEWARK, N. J.



# THE OHIO STATE UNIVERSITY

---

## COLLEGE OF VETERINARY MEDICINE

---

Columbus, O.

Offers a three year graded course leading to the degree of Doctor of Veterinary Medicine. Unexcelled laboratory and clinical facilities. New buildings especially designed for teaching veterinary medicine according to the most approved modern methods. Faculty of specialists devoting whole time to teaching. For College Bulletins address **DAVID S. WHITE, Dean.**

---

## THE GEORGE WASHINGTON UNIVERSITY

---

### College of Veterinary Medicine, Washington, D. C.

---

Offers a graded four year course leading to the degree of Doctor of Veterinary Medicine (D.V. M.), beginning with the session 1912-13.

This course is designed for well educated young men employed in the government service or elsewhere during the day. Lectures begin at 5. P. M.

School recognized by American Veterinary Medical Association, U. S. Civil Service Commission, U. S. Bureau of Animal Industry and State Examining Boards.

Clinics, hospitals, military posts, government laboratories and experiment stations located at the National Capital give students superior advantages in acquiring a broad education in veterinary science. For catalog, address

**DAVID E. BUCKINGHAM, V. M. D.**

Dean of Veterinary Faculty,

2113-15 FOURTEENTH ST., N. W.

---

## The Kansas City Veterinary College,

---

N. W. Corner 15th St. and Lydia Ave.

Kansas City, - - - Missouri.

A three year graded course. Daily clinical instruction. Excellent laboratory equipment. Graduates are eligible to membership in the American Veterinary Medical Association, also eligible to appointment as U. S. Veterinary Inspectors and as U. S. Army Veterinarians. . . .

**FOR CATALOGUE, ADDRESS**

**.... S. STEWART, Dean.**

---

## UNIVERSITY OF PENNSYLVANIA.

---

**SCHOOL OF VETERINARY MEDICINE.**

*The course of instruction is graded and extends over three years, with one session beginning the 4th Friday in September, and ending the 3d Wednesday in June in each year.*

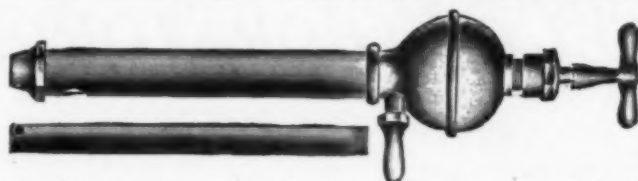
Practical Instruction, including Laboratory Work in Pharmacy, Chemistry, General Biology, Histology, Physiology, Comparative Osteology, Dissecting, Botany, Pathology, Bacteriology, and Inspection of Meat and Milk, with personal care and treatment of animals in the hospitals and clinics, is a part of the regular course without additional expense.

Graduates of this school are eligible for membership in the American Veterinary Medical Association.

For Catalogue, Address **LOUIS A. KLEIN, V.M.D.,** Dean of Veterinary Faculty,

Dept. F, Cor. 39th St. and Woodland Ave., Philadelphia.

## THE SIMPLEX CONTINUOUS FLOW PUMP

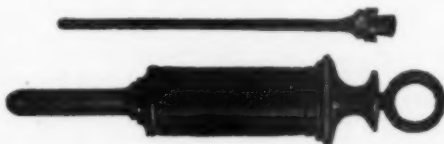


Is made of solid brass and nicely nickel plated. It is an actual continuous flow pump, simple

of construction and easy acting. Gives perfect satisfaction wherever used. Price \$5.25.

### Heavy Brass Dose Syringes

Nickel plated, 2 oz. size, with 2 pipes. \$1.00 each; half dozen, \$5.50; dozen, \$10.00.



New Standard Veterinary Thermometer, with ring to hold cord. Same as recommended by the B. A. I. Price 60c. each; dozen, \$6.00.

**FRANK S. BETZ CO., Hammond, Ind.**

*The Largest Manufacturer in the World of Veterinary, Surgical and Dental Instruments and Supplies. Write for Catalog.*

ESTABLISHED 1851.

INCORPORATED 1897.

## EIMER & AMEND, WHOLESALE DRUGGISTS,

205, 207, 209 and 211 THIRD AVENUE, NEW YORK CITY  
MAKE A SPECIALTY OF ALL

**Drugs, Extracts, Tinctures, Chemicals,  
Etc., Etc., Used in Veterinary Practice.**

**E. and A.'s VETERINARY GLYCERIN SUPPOSITORIES.**

**SULFGLYCEROLE FOR SKIN LESIONS.**

**SULFGLYCEROLE OINT. FOR SCRATCHES.**

SOLE AGENTS FOR

**H. HAUPTNER, BERLIN, GERMANY,  
VETERINARY INSTRUMENTS.**

Write for Catalogue !!!

# PASTEUR LABORATORIES

OF AMERICA  
BIOLOGICAL PRODUCTS

NEW YORK 366 368 WEST 117<sup>th</sup> ST.

SAN FRANCISCO

CHICAGO 4435, DEARBORN ST.

We are the sole concessionaires of the original and only genuine Pasteur's Anthrax Vaccine discovered by Profs. Pasteur, Chamberland and Roux.

For the prevention of Anthrax or Charbon in horses, mules, cattle, sheep and goats. Introduced by us into this country in 1895 and successfully used by veterinarians on over 40,000,000 animals.

## Antistrangles Serum

For the prevention and cure of true strangles in horses.

## Antistreptococcic Serum (Veterinary)

Indicated in all conditions due to streptococcus infection; notably Influenza, Distemper, Shipping Fever, Purpura, Hemorrhagica or Equine Anasarca. Furnished in liquid and dry form, the latter keeping indefinitely.

## Antitetanic Serum (Veterinary)

The most reliable cure for Tetanus and an infallible preventive of that disease. Furnished in liquid and dry form, the latter keeping indefinitely.

## Mallein and Mallein Solution

For the diagnosis of Glanders in horses and mules. Mallein Solution is ready for use and is furnished in one, two and five-dose packages.

## Tuberculin and Tuberculin Solution

For the diagnosis of Tuberculosis. Tuberculin Solution is ready for use as sold and is furnished in one, two and five-dose packages.

## Antivenomous Serum

Exerts a specific action against the venom of all species of poisonous reptiles. In dry and liquid form.

## Blackleg Vaccine, Powder Form

## Blackleg Vaccine, Cord Form

## Blackleg Vaccine, Pellet Form

We are the sole concessionaires of the original and only genuine Blackleg Vaccine for the prevention of Blackleg in Cattle.

Produced exclusively for us by the discoverers, Professors Arloing, Cornevin and Thomas' heritiers. Furnished in the powder, cord, and pellet form and the single and double treatment. The latter should be used whenever possible and invariably upon pure-bred, highly-graded, or valuable stock. Successfully used by veterinarians on over 36,000,000 head.

## Canine Distemper Serum

Principally a curative agent for Canine Distemper. It also confers a limited immunity.

## Polyvalent Calf Dysentery Serum.

## Hog Cholera Serum.

## Eucamphol

An ideal Antiseptic, Disinfectant and Germicide. It is a compound of Eucalyptus Oil, Camphor Oil and Cresol, and is indicated in daily practice.

## Lincoln Disinfectant

For general and extensive disinfecting; compares favorably with any general disinfectant on the market.

## Traumatol (Iodocresine)

A powerfully Antiseptic, Cicatrisant and non-toxic Microbicide. Furnished in Solution, Powder and Vaseline.

## Pasteur Laboratories Rat Virus

For the scientific destruction of rats, mice and moles. Harmless to human beings, domestic animals, birds, etc.

# JUST PUBLISHED

## BOVINE TUBERCULOSIS AND ITS CONTROL

By VERANUS ALVA MOORE, B. S., M. D., V. M. D.

Professor of Comparative Pathology and Bacteriology,  
New York State Veterinary College, at Cornell University.

It has seemed for those who are intelligently working to eradicate this scourge, benefit would be derived from bringing together the results of the more important investigations on the nature, diagnosis and various methods for the control of this disease. It is well to keep in mind the words of the great Pasteur: "It is within the power of man to eliminate the infectious diseases from the face of the earth." To accomplish this for Tuberculosis requires full knowledge of its cause, morbid anatomy, means by which it is disseminated and methods for its control.

Pages X + 164 and 30 full page plates. Cloth. \$2.00 net Postpaid.  
The illustrations are unexcelled by those in any Medical Text-book.

---

### VETERINARY PUBLICATIONS

The Pathology and Differential Diagnosis of Infectious Diseases of Animals. <i>Moore</i> . . . . .	\$4.00
The Principles of Microbiology. <i>Moore</i> . . . . .	\$3.50
Veterinary Obstetrics. <i>Williams</i> . . . . .	\$8.00
Surgical and Obstetrical Operations. <i>Williams</i> . . . . .	\$2.50
Veterinarian's Handbook of Materia Medica and Therapeutics. <i>Udall</i> . . . . .	\$1.50
General Surgery. <i>Frohner</i> translated by <i>Udall</i> . . . . .	\$3.00
Veterinary Doses and Prescription Writing. <i>Fish</i> . . . . .	\$1.50
Examination of the Urine of the Horse and Man. <i>Fish</i> . . . . .	\$1.50
Elementary Exercises in Physiology. (Laboratory Manual) <i>Fish</i> . . . . .	\$1.50
Elementary Exercises in Materia Medica and Pharmacy. (Laboratory Manual) <i>Fish</i> . . . . .	\$1.50
The Clinical Pathology of the Blood of Domesticated Animals. <i>Burnett</i> . . . . .	\$2.50
Pure Milk and the Public Health. <i>Ward</i> . . . . .	\$2.00

ABOVE PRICES NET, POSTPAID

## CARPENTER & CO.

Ithaca, N. Y.

## RESTRAINT OF DOMESTIC ANIMALS.

### **A Book for Students and Practitioners**

By **GEORGE R. WHITE, M. D., D. V. S., Nashville, Tenn.**

Over 300 pages, with 332 illustrations made from drawings by one of the best pen artists in the United States. It illustrates and fully describes every known means of **RESTRAINT** of the Horse, Ox, Dog and Hog. This is by far the **best illustrated book** ever written in America on any branch of Veterinary Science. Published by the Author. For sale by all veterinary booksellers. Sent post or express prepaid to any address upon receipt of price. "**Restraint of Domestic Animals**" has already been adopted as a **Text Book** in 18 of the 21 Veterinary Colleges of America. Its sale has been phenomenal.

Every practitioner should secure a copy for study and reference. **PRICE, \$3.75.**

## **Red • Ball • Brand • Stock • Food.**

**Purely Vegetable. Not a Secret Preparation. List of Ingredients Sent to Veterinarians on Application.**

Sold to Veterinary Surgeons in Bulk, they can make it into appropriate powders of 1 oz. to a dose.

**The most Uniformly Successful Digestive Regulator Known.**

Veterinarians throughout the country are using it and testifying to their successful treatment of digestive disorders.

Write for Circulars, Price List and Sample Package to

**ATKINS & DURBROW,**

**157 WATER STREET**

**NEW YORK.**

## **THE BRADWOOD MANUFACTURING CO.**



**THE HUMANE EQUINE OPERATING TABLE**

**OFFICE & FACTORY 125 WATER ST. NEW HAVEN, CONN.**

## **THE ST. JOSEPH VETERINARY COLLEGE**

**ST. JOSEPH, MO.**

Thoroughly modern and complete laboratory equipment, unexcelled clinical facilities. Over three thousand clinical cases used for instruction during the past session. Session of 1913 begins September 9. For prospectus and full information, address

**Dr. F. W. CALDWELL**

**7th and Sylvania Sts.**



## PHILLIPS VETERINARY SPECIALTIES.



Phillips "Perfected" Stomach Tube.  
Phillips Soft Rubber Catheter.  
Phillips "Continuous Stream" Injection Pump.  
Phillips "Faultless" Decayed Root Extractor.

Beware of  
imitations  
and so-called  
Phillips  
Tubes.



### PHILLIPS "PERFECTED" STOMACH TUBE.

In the May, 1904, number of the AMERICAN VETERINARY REVIEW, I wrote an article introducing the operation of siphoning the stomach of the horse for the instant relief and positive cure of Stomach Flatulence, Acute Indigestion, Gastritis and Choke.

To insure the operation becoming a success in every surgeon's hands, I had a tube of superior quality manufactured, having correct dimensions, consistency and certain markings, and styled it THE PHILLIPS "PERFECTED."

The success of the operation is unquestionably proven by public demonstrations at State and International Meets, by the Veterinary Colleges teaching and recommending the operation, by imitations manufactured and sold by Veterinary Supply houses, by other tubes manufactured that are complicated in structure and difficult to pass, and proven also by the fact that most veterinary instrument dealers have made a stomach tube their leading add since one year after The Phillips "Perfected" had proven its success.

The Phillips "Perfected" Tube with the accompanying Stilet furnishes the Surgeon with the finest Probang ever offered to the profession. Directions for using accompany each tube. Price \$8.00, less dealers discount of 25%, \$6.00 Cash.

### PHILLIPS SOFT RUBBER CATHETER.

PHILLIPS SOFT RUBBER CATHETER IS OF SUPERIOR quality, four feet long. Neither heat nor cold affect it. Its life with constant usage is from five to ten years. Used as a Tourniquet in foot operations it has no equal. Directions for using and stilet accompany each catheter. Price \$1.75, less dealers discount of 25%, \$1.31 Cash.

### PHILLIPS "CONTINUOUS STREAM" PUMP.

PHILLIPS "CONTINUOUS STREAM" STOMACH AND RECTAL INJECTION PUMP is made of solid brass, nickel plated, simple of construction and easy acting. This pump should accompany every Phillips "Perfected" Tube. No one should practice siphoning the stomach without using an injection pump. Attached to the tube it makes an IDEAL RECTAL INJECTION outfit. Price \$8.00, less dealers discount of 30%, \$5.60 Cash.

### PHILLIPS "FAULTLESS" DECAYED TOOTH EXTRACTOR.

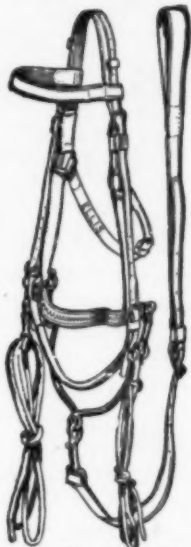
The only extractor that operates within the alveolar cavity. Made expressly for roots and shells. Price \$8.00, less dealers discount of 30%, \$5.60 Cash.

Send for circular for complete description of these Specialties.

Address all orders to, J. M. PHILLIPS, D. V. S.,

3732 WEST PINE BL'VD, ST. LOUIS, MO.

## "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1901.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with off-sets, keeping the cheek pieces of the halter  $\frac{1}{2}$  to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped, is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

#### Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it *inside the nose-band*, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(For side-lines, 5 yards sash-cord, cut in two, snaps on one end.)

Price of Halter, \$10.00. For further particulars address T. C. D. F., Hamilton Grange Branch, New York P. O.



# BACILLOL

has been approved in competent literature as a germicide and as the most economical disinfectant, antiseptic and deodorant, whose invariable composition is assured by constant scientific supervision. The fact that it will readily saponify is an absolutely reliable guarantee of its prompt germicidal effect which wholly distinguishes it from the soluble Cresols now in the market, in regard to which it is known that they will not saponify.

**Prof. Dr. Liebreich** says:

The strong disinfecting qualities and the relative non-poisonousness of Bacillol should alone be an inducement to employ it. Besides these merits it deserves mention that it is much more agreeable to manipulate with this preparation than with others of a similar kind, because it makes instruments and utensils less slippery. Also the smell of "Bacillol" disappears readily, which is certainly a quality of some consideration in the treatment of the sick, and particularly for midwifery.

These are features which distinguish "Bacillol" advantageously from other disinfectants, the more so as its economical side claims special attention.

## Bacillol Vaginal Preparations

are acknowledged to be a Specific against Vaginal Catarrh, an infectious disease (see "American Veterinary Review," No. 1, 1907), the modes of application being as follows:

### BACILLOL Vaginal Sticks

These are cut up, in accordance with the graduations, into pencils which can be easily handled and thus provide an economical treatment, more particularly for the live stock of large cattle owners.

### BACILLOL Vaginal Cartridges

are frequently given the preference, especially for saving time, because they are easily applied. Both modes of treatment insure the radical and prompt eradication of the infectious vaginal catarrh.

### BACILLOL Cartridges for Dysentery in Calves

have successfully stood the test as a remedy for the prevention of Dysentery in calves, applied by introducing a few cartridges into the genital canals of the brood animal shortly before calving. The simplest, most reliable and most economical treatment for the prevention of Dysentery in calves.

Obtainable in the trade and from

**Bruno Grosche & Co.**

**4 & 6 Jones Lane, New York**

"O

A M  
THAN

B

1 N

2

Sample  
Full L  
ca Res



66

A

TH

^

5  
C  
.

# "CHINOSOL"

A MORE POWERFUL ANTISEPTIC  
THAN BICHLORIDE OF MERCURY

**But**

- 1 Non-poisonous
- 2 Does not coagulate albumin
- 3 Does no injury to membranes
- 4 Does no damage to tissues



- 5 Does not break down granulation
- 6 Causes no irritation
- 7 Has marked analgetic power
- 8 An instantaneous deodorant
- 9 Costs about three cents a quart

Sample and  
Full Literature  
on Request

CHINOSOL CO.  
PARMELE PHARMACAL CO.  
54 SOUTH ST., N. Y.

Abscesses  
Inflamed  
Glands  
Periostitis  
Bog Spavin  
Capped Knee  
Infected  
Wounds  
Harness  
Galls  
Bruises



Burns  
Distemper  
Pneumonia  
Caked Bag  
Orchitis  
Sprains  
Scratches  
Tendonitis

**For Any Inflammatory Condition. Apply Hot and Thick  
Cover With Absorbent Cotton**

Booklet and Spatula on Request

# TAKE NO CHANCES WITH TETANUS.

NOTWITHSTANDING the antiseptic precautions ordinarily observed, tetanus in animals is of so frequent occurrence that the most trivial punctured wounds and injuries to the feet are frequently followed by tetanic symptoms and fatal results.

Treatment, whenever possible, should anticipate the manifestation of the nervous symptoms of the disease.

The injection of

## ANTITETANIC SERUM, VETERINARY (P. D. & CO.)

is advisable in all cases in which there is good reason to fear that infection with tetanus bacilli may have taken place. For suspicious street wounds prophylactic injection is not only justifiable, but demanded as a duty by present conditions of prophylactic therapeutics.

SEND FOR BOOKLET ON  
"ANTITETANIC SERUM AS A CURATIVE AGENT."

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

## **McKILLIP VETERINARY COLLEGE, CHICAGO.**

(CHARTERED 1892.)

**The faculty has been reorganized and strengthened by the addition of several specialists of national reputation.**

The equipment of this college is complete in every detail, furnishing the best opportunities for scientific and practical education.

**LARGEST PRACTICE IN THE WORLD.**

**Regular Graduate Course, acquiring the degree of Doctor in Veterinary Medicine.**

**Post-Graduate Course, acquiring the degree of Doctor in Veterinary Medicine.**

**School opens September 10th, 1913.**

Write for catalogue and other information

**GEORGE B. MCKILLIP, M. D. V., Secretary,**

**No. 1639 Wabash Avenue, Chicago**







# Haussmann & Dunn Co.'s AUTO-CAUTERY

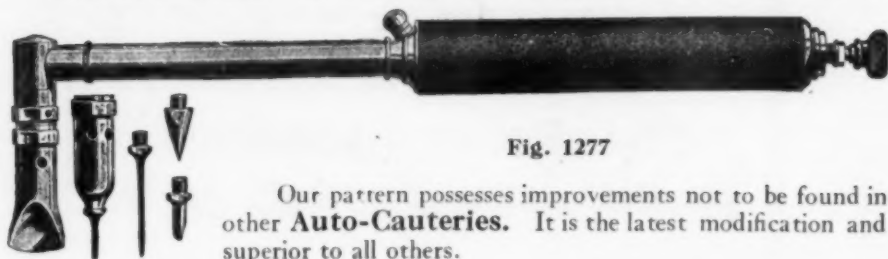


Fig. 1277

Our pattern possesses improvements not to be found in other **Auto-Cauteries**. It is the latest modification and superior to all others.

**Advantages.**—This instrument possesses many advantages over the usual forms of cauteries now in general use, the most important being its simplicity, ease of manipulation with one hand, and maintenance of temperature for nearly one hour, producing the maximum heating effect required for this mode of treatment. Full directions with each outfit.

WRITE FOR CATALOGUE

## PRICES

Complete in Cloth Roll with Alcohol Lamp and Wrench.....	\$15.00
With Ball Point Extra.....	16.50
Complete in Polished Wood Case with Alcohol Lamp, Wrench for Adjusting and 4-oz. G. S. M. C. Bottle for Ether.....	18.00
With Ball Point Extra.....	19.50

## HAUSSMANN & DUNN CO.

Veterinary Surgical Instruments  
Text Books and Supplies

708 S. Clark Street, Chicago.

"WHERE THERE IS PUS"

## Poly-Valent Bacterins

Successfully used in the treatment of abscesses, wire cuts, nail punctures, poll evil, fistulous withers, open joint, strangles, lymphangitis, cellulitis, septic arthritis, quittor, etc.

6 ampules (2 c.c. each) in package \$1.00

## Influenza Vaccine

A dependable product of proven value, used as an immunizing and curative agent in the treatment of influenza, shipping fever, yards fever, acclimation fever, and febrile diseases of bacterial origin in horses and mules.

6 ampules (2 c.c. each) in package \$1.00

### Distemper Serum (canine)

A valuable prophylactic and immunizing agent.  
10 c.c. ampule, \$1.00.

### Distemper Bacterins (canine)

Used as a curative agent in conjunction with the "Distemper Serum."  
6 ampules 2 c.c. each \$1.00.

N. B.—The complete treatment containing one 10 c.c. ampule of the Distemper Serum and 6 ampules of the Distemper Bacterins, \$2.00.

## Accuracy Laboratories

1714 and 1716 West Madison Street

Chicago, Ill.

Painstaking comparisons made repeatedly  
by the most famous veterinarians of  
the world have established the fact that—

## **Glyco-Heroin (Smith)**

is decidedly the most reliable remedy for

**COUGH, BRONCHITIS, LARYNGITIS AND PNEUMONIA  
IN HORSES, CATTLE OR DOGS**

Its action is more prompt than that of any  
other remedy, and no danger whatever attends  
its proper administration.

Glyco-Heroin (Smith) promptly checks  
cough, relieves suffocative breathing, liquefies  
bronchial and pulmonary exudations, allays  
fever, alleviates pain, overcomes nervousness  
and restores the appetite.

---

**DOSE:** For horses or cattle,  
one ounce every two or three  
hours. For dogs, from ten  
drops to one-half teaspoonful.

**SUBSTITUTION.** To insure entirely  
satisfactory results, it is necessary to em-  
phasize the name "Smith" when prescrib-  
ing, for many worthless imitations of Glyco-  
Heroin are dispensed by unscrupulous  
dealers.



---

**MARTIN H. SMITH COMPANY**  
NEW YORK, N. Y. U. S. A.

# **INVESTIGATION of the Instruments and Appliances is as Important as that of Modern Surgical Methods**

Seldom does the busy veterinarian have the opportunity to view so extensive an assortment of prime quality instruments and appliances as we display.

When in New York, make a special effort to visit our showrooms, where you can see the instruments needed to complete your armamentarium.

As you go from case to case, from one piece of furniture to the next, keep in mind that each article is made to conform to our standard of quality. Perfection in veterinary equipment means the highest grade materials are worked up by the most carefully trained artisans in the manner that gives absolute satisfaction to the user.

## **The Kny-Scheerer Co.**

*Manufacturers of Veterinary Instruments*

**404-410 WEST 27th ST., NEW YORK**

*This Trade Mark*



*is Your Guarantee*

# ONTARIO VETERINARY TORONTO COLLEGE CANADA

Under the control of the  
Department of Agriculture of Ontario  
Affiliated with the University of Toronto

**COLLEGE RE-OPENS WEDNESDAY, 1st OCTOBER, 1913**

N. B.—A short course on the Surgical and Medical Treatment of Wild  
Animals in Confinement will be given as a new subject this year.  
Calendar Sent on Application.

**E. A. A. GRANGE, V.S., M.Sc.,**  
*Principal*

## DOCTOR, ARE YOU, AS A VETERINARIAN ALLIED TO THE HORSE

As your chief practice and income. If so, Promote Horsebreeding and Improvement. Become identified with **THE LIVE STOCK JOURNAL**. The one great paper. The Draft and Coach Horse Journal of America.

### **In our Campaign For All Allied Horse Interests to Boost Horse Breeding**

As the greatest prosperity of the nation to breed more good horses to supply the great market demand, or the work must be done by the automobile and truck that help but little in the world's work.

Horses are in greatest demand and highest prices ever known. We must have more good horses for city and farm teams and the export trade, to maintain and develop the veterinary interest in America.

Give us your co-operation. Use the Live Stock Journal, 2 years for \$1.00. Ten annual Subscribers, \$2.50. Write for free sample copies. Address

**LIVE STOCK JOURNAL, HYDE PARK, CHICAGO**

## MODERN VETERINARY MEDICINES OF MERIT

**DYMAL**, antiseptic, odorless, non-poisonous, non-irritating and siccative powder, indicated in cuts, lacerations, contusions, burns, weeping as well as dry eczema; applied as powder or ointment; an ideal substitute for iodoform.

**LAVISOL**, a powerful antiseptic and disinfectant, stable, non-toxic, clearly soluble in water, safer and more effective than carbolic acid or bichloride or mercury, of particular value in the different forms of mange.

**BOVOVACCINE**, Prof. von Behring's immunizing antitubercular substance, endorsed by members of the veterinary profession and successfully used by representative dairymen and breeders of cattle.

**TUBERCULIN** (Behringwerk).

**GALLOGEN**

Intestinal astringent, antiseptic and germicide.

CLINICAL THERMOMETERS  
HYPODERMIC SYRINGES

**ANTITETANIC SERUM**

(von Behring), in ready-for-use syringes of 1,500 and 3,000 Units.

**VALIDOL**

Analeptic and sedative in collapse and vomiting of dogs and cats.

### C. BISCHOFF & CO., Inc.

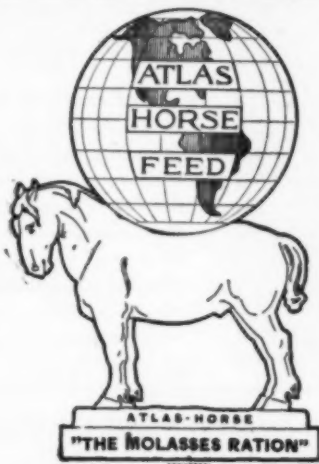
451-453 Washington Street,

New York, N. Y.

## ATLAS HORSE FEED merits the veterinarian's thoughtful consideration.

### IT IS NOT

a medicine, nor a condimental food; neither does it contain any drugs or chemicals whatever, nor should it be confused with so called "patent feed."



### IT IS

a genuine molasses ration made on scientific principles and rich in pure Louisiana cane molasses. Highly nutritive, thoroughly digestible, and infinitely more convenient than mixing your own molasses feed.

*Full particulars furnished upon application to*

## The Meader-Atlas Co.

New York Office: 105 and 107 HUDSON STREET.



# Antistreptococcic Serum, Veterinary

(PARKE, DAVIS & CO.)

This product is obtained from the blood of horses which have been immunized to highly virulent cultures of streptococcus erysip-



elatis and other strains. It is passed through sterilized filters and subjected to the most rigid bacteriological and physiological tests. It is of value in all cases of

## STREPTOCOCCIC INVASION.

It has been used with excellent results in the treatment of infectious anemia, septicemia, pyemia, etc., and is believed to be serviceable in strangles, bronchitis, pneumonia, distemper, influenza, and other conditions due to invasion of streptococci.

♦ ♦ ♦

Antistreptococcic Serum (P. D. & Co.) has proved especially successful in

## PYEMIC ARTHRITIS.

For example: Dr. John Spencer, former Chief Veterinarian to the Virginia College of Agriculture, tells of a number of cases treated, the death-rate being greatly reduced. He suggests that in districts where the disease is frequent, a prophylactic dose of 5 to 10 Cc. be given on the eighth and fifteenth days. This, together with proper treatment of the umbilicus at birth, he says, will generally prevent all trouble. (*Send for reprint.*)

### ANTISTREPTOCOCCIC SERUM, VETERINARY.

Bio. 721.	10 Cc. in syringe container (supplied on unspecified orders),	per pkg.,	\$1.10
Bio. 722.	10 Cc. in rubber-stoppered bottles,	per pkg.,	1.10
Bio. 723.	In ounce vials,	per oz.,	2.00

LITERATURE ON REQUEST.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

# TALLIANINE

TRADE MARK REGISTERED.

Administered by intravenous injections through the jugular vein, and has been demonstrated to be the most rational and positive treatment for

PNEUMONIA of all forms and at all stages,  
PURPURA HEMORRHAGICA, PULMONARY CONGESTION,  
TYPHOID FEVER and allied diseases,  
INFLUENZA, SEPTICAEMIA, PYAEMIA and  
all septic conditions,  
DISTEMPER, SHIPPING FEVER, SUNSTROKE and  
HEAT EXHAUSTION.

Excellent results have also been obtained by its use in the treatment of Laryngitis, Thermic Fever, Pleurisy, Septic Metritis, Nephritis, Infectious Fever and Wet Eczema.

---

A TRIAL WILL CONVINCE THE MOST SKEPTICAL.

---

To be ordered from all druggists and veterinary supply dealers  
or from the sole agents.

**WALTER F. SYKES & CO.,**  
**85 WATER STREET, NEW YORK.**

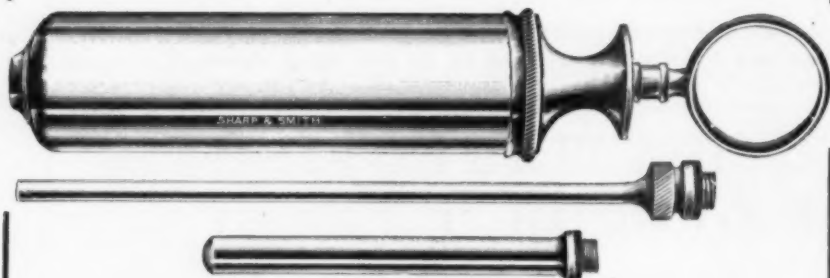
132 Chestnut St., PHILADELPHIA, PA. 113 Broad St., BOSTON, MASS.

WESTERN AGENTS

R. R. STREET & CO., 184 Washington Street, CHICAGO, ILLS.

DESCRIPTIVE MATTER SENT UPON REQUEST.

## EXTRA SPECIAL OFFER



Our 2-Ounce Extra Heavy Perfected Rounded End Heavy Double Leather Plunger, Nickel Plated Dose Syringes, with one 3" Heavy Dose Pipe and one 6" Quitter Pipe or one only 6" Heavy Dose Pipe, \$0.90 each, postage extra, 18 cents. \$4.50 per half dozen or \$8.00 per dozen, F. O. B., Chicago. Same Syringe with 9" Heavy Dose Pipe only \$1.00. each. \$5.00 per half dozen or \$8.50 per dozen. F. O. B., Chicago.

## FOR A LIMITED TIME ONLY



Our 5-inch Certified Magnifying Thermometers with Ball Bulb and Loops, each in hard rubber case for testing cattle as well as for every day use. Each, 60 cents. Per dozen, \$6.00

Same Thermometer except without Loop, but Ball Bulb, 50 cents each. \$5.00 per dozen.

Our 400 Page Veterinary Catalog "G," 10th edition and Supplement Free Postpaid on request.

## SHARP & SMITH

Manufacturers, Importers and Exporters of High Grade  
Veterinary Instruments and Supplies

103 N. WABASH AVE., CHICAGO, ILL.

UNITED STATES  
CANADA  
MEXICO  
WEST INDIES

GREAT BRITAIN  
IRELAND  
AUSTRALIA  
NEW ZEALAND

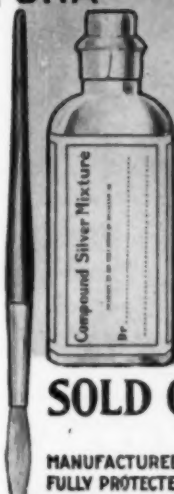
HAWAII  
PHILIPPINES  
INDIA  
SOUTH AFRICA

# M·A·C

MISTURA

ARGENTI

COMPOSITA



## THE MODERN TREATMENT

FOR SPLINTS, SPAVINS, CURBS, SIDE BONES, RING-BONES, GUTTOR, SHOE BOILS, OSSIFICATIONS, INFLAMED TENDONS, BURSA LAMENESS, ETC.

## ADVANTAGES

CAN BE APPLIED IN A FEW SECONDS.  
DOES NOT SOIL THE HANDS AS IT IS APPLIED  
WITH THE BRUSH WHICH ACCOMPANIES EACH  
BOTTLE.  
DOES NOT BLEMISH THE HORSE NOR INTER-  
FERE IN ANY WAY WITH HIS DAILY WORK.  
MORE PROMPT THAN BLISTERS IN EVERY CASE.  
IN ACUTE OR SUB-ACUTE CASES, BETTER THAN  
FIRING.

**SOLD ONLY TO VETERINARIANS**

OR ON THEIR ORDER

MANUFACTURED AND  
FULLY PROTECTED BY

**CARTER-LUFF CHEM.CO. HUDSON,N.Y.**

## PRICES TO THE PROFESSION (DELIVERED)

SINGLE BOTTLE	- - \$2.00	1/4 DOZEN	- - \$5.00
1/2 DOZEN	- - - \$8.00	ONE DOZEN	- \$15.00
TWO DOZEN	- - \$25.00		

NO DISCOUNTS IF ORDERED OF DEALERS.

A DIVIDEND OF ONE BOTTLE FREE WITH EACH 1-4 DOZEN. TWO FREE WITH 1-8 DOZEN, FOUR FREE WITH ONE DOZEN, AND EIGHT FREE WITH TWO DOZEN WILL BE GIVEN IF THE ORDER IS SENT DIRECT TO THE MANUFACTURERS

**CARTER-LUFF CHEM. CO. HUDSON, N. Y.**

(OVER) 5

Handling Horses made easy by using the Veterinarian's  
Favorite Ambulance.



**RECH-MARBAKER CO.,**

**SPECIALISTS—DESIGNERS.**

**MAKERS OF HIGH GRADE AMBULANCES.**

**Girard Ave. and 8th St.,**

**PHILADELPHIA, PA.**

*Send for information and catalogue.*

**SERUMS :**

Tetanic  
 Streptococic  
 Distemper and Influenza  
 Hog Cholera

**BACTERINS :**

Anti-Suppurine  
 Pneumonia  
 Streptocine  
 Influenza

**VACCINES :**

Anthrax  
 Black Leg  
 Hog Cholera

## ANTI-SUPPURINE

A polybacterial vaccine or bacterin for the treatment of Suppurating Conditions in Veterinary practice. Has been very extensively and successfully used since the spring of 1910.

In packages of 6 vials of 2 c. c., each, \$1.50; or \$15 per dozen packages.

In vials of 20 c. c., \$2; or \$20 per dozen.

 In liquid form ready for use.

## EUCAMPHINE


A compound of eucalyptus and camphor oils, cresylic acid, and saponaceous oils. Indications: Internally, whenever an antiseptic, antiperiodic, antiferment or antispasmodic is required. Externally, employed as a wash, douche, and dressing. High-class, agreeable and effective disinfectant and deodorant.

Pints,	\$ .50	Gallons,	\$3.00
5-pints,	\$2.00	2-gallons,	\$5.50
		5-gallons,	\$12.50

## GUAIALYPTOL

Eucamphine with Guaiacol. Indications:— All catarrhal affections of the respiratory and intestinal tracts, and notably for treatment of Laryngitis, Pharyngitis, Bronchitis, Oedema Glottidis, Influenza, Distemper, Strangles, Infectious Diarrhea, Septicemia, Gastric or Intestinal Flatulence, etc. It is also serviceable in Pneumonia.

Pints, \$ .75	5-pints, \$2.50	Gallons, \$4.00
---------------	-----------------	-----------------

 Ask for samples, and get acquainted with Eucamphine and Guaialyptol.

### THE CUTTER LABORATORY OF ILLINOIS CHICAGO, ILLINOIS

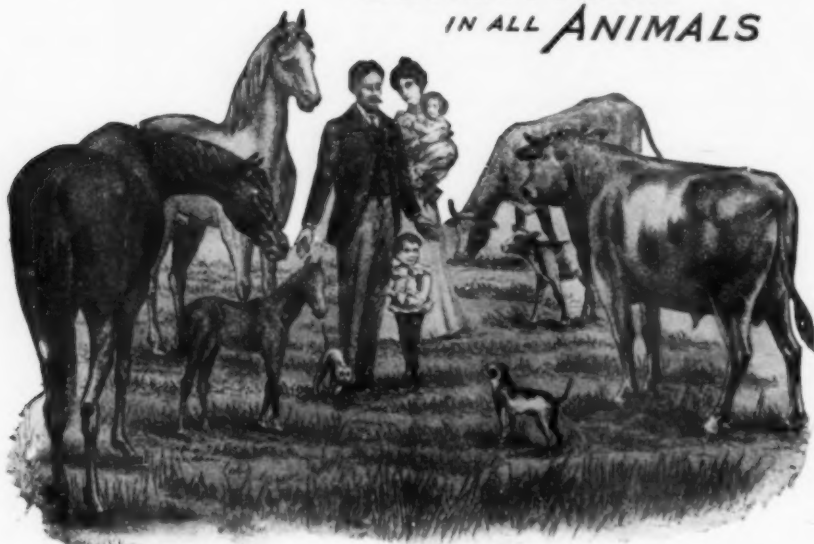
Eastern Supply Depot  
**KALISH PHARMACY**  
 Twenty-third St. & Fourth Ave.  
 NEW YORK CITY

Missouri Valley Supply Depot  
**ST. JOSEPH VETERINARY  
LABORATORY**  
 ST. JOSEPH, MO.



# Sanmetto

FOR THE  
GENITO-URINARY  
CONDITIONS  
IN ALL ANIMALS



[The Tender-Hearted Veterinarian with Wife, Daughter and little Son in the midst of his Patients that seem to reciprocate his kindness.]

A POSITIVE REMEDY  
—IN—  
**DISEASES OF THE GENITO-URINARY ORGANS**  
—OF—  
**THE HORSE AND DOG AS WELL AS MAN**

Doctor, when you have a Horse or Dog suffering from Kidney, Bladder or Urethral Trouble; or from any Irritation or Inflammation of the Urinary Tract; or from Impotency or Sterility,

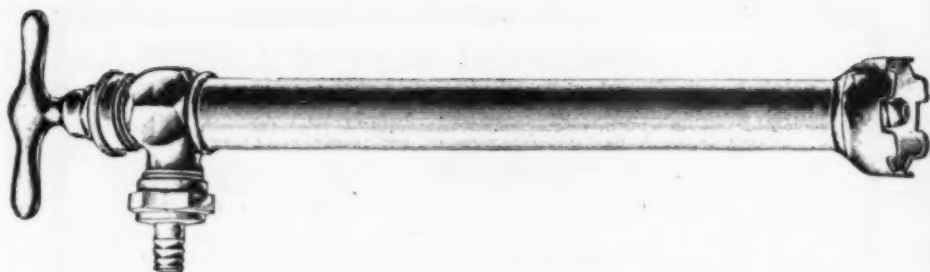
**ORDER SANMETTO**

Sanmetto is largely used in Veterinary Practice for the above troubles and has been found Worthy and Reliable. It is also strongly endorsed and much used in AZOTURIA—many cases reported cured with it. Sanmetto acts as a vitalizing tonic to the Genito-Urinary Organs. It is eliminated from the System almost entirely through the Kidneys and Bladder—hence its soothing, healing and tonic power upon the entire Urinary Tract.

To avoid substitution, order thus: R, SANMETTO—one bottle—original package.

DOSE:—For Horse, one ounce three times a day. For Dog, one teaspoonful three times a day.

Price One Bottle, \$1.00. Case of One Dozen Bottles, \$8.00. Sold by all Reliable Druggists  
Pamphlet on application to **OD CHEM. CO., New York.**



- V/1441. The Queen City Continuous Flow Injection and Suction Pump. This pump is the best pump made for stomach tube, as it can be used for injection or suction, and is continuous flow. It is made of heavy brass throughout, heavily nickel plated, no parts to rust or get out of order. 16 in. long. **Special Price.** pump only . . . . . \$3 50
- V/1442. Queen City Pump, with six feet heavy, white, non-collapsible tubing and wood nozzle. **Special Price** . . . . . 5 00
- V/1443. Queen City Pump, with Woche's 10-foot maroon rubber Stomach Tube and Stilet. **Special** . . . . . 7 50

We carry a complete line of Auto-Cauteries, Roaring Instruments and many new designs of other instruments. Submit your wants to us.

*Complete Veterinary Catalogue sent Free upon request.*

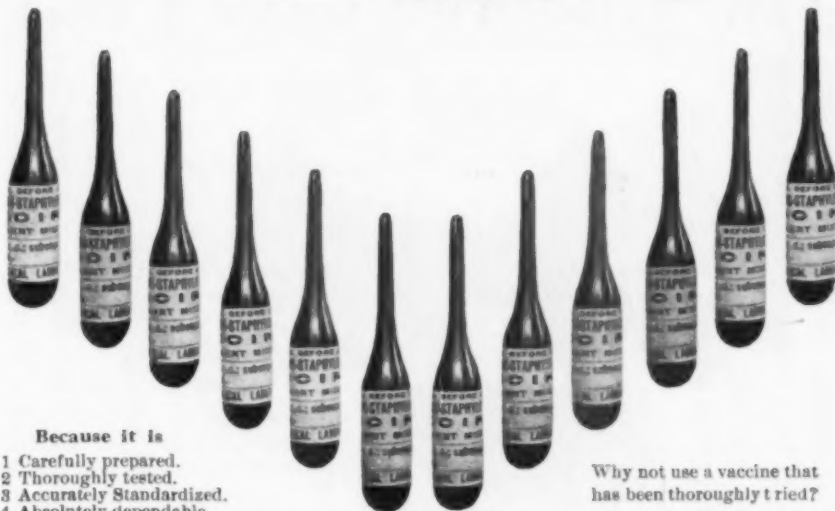
## THE MAX WOCHER & SON CO.,

Manufacturers of High Grade Veterinary Instruments and Hospital Supplies.

19-21-23 6th AVE. WEST :: :: CINCINNATI, OHIO.

### BEEBE BACTERIAL VACCINES (Staphylo-Streptococcal Polyvalent Mixed)

Insure your surgical success in nail prick, calk wound, wire cut, quitter, poll evil, fistulous wither, etc.



Because it is

- 1 Carefully prepared.
- 2 Thoroughly tested.
- 3 Accurately Standardized.
- 4 Absolutely dependable.

Why not use a vaccine that has been thoroughly tried?

Package containing 12 ampoules, \$1.50    12 packages containing 12 ampoules, \$15.00  
24 packages containing 12 ampoules, \$27.50

**BEEBE BIOLOGICAL LABORATORIES, ST. PAUL, MINN.**

NEW VETERINARY BOOKS  
**A SYSTEM OF VETERINARY MEDICINE**

By various writers. Edited by  
 E. WALLIS HOARE, F.R.C.V.S.

To be complete in two handsome volumes. Volume 1 is now ready, 1366 pages, half leather. Price for the set, for advance orders, **\$15.00 delivered.** (Terms: \$7.50 upon delivery of first volume; \$7.50 when volume 2 is ready.)

**NOW COMPLETE**  
**Special Pathology and Therapeutics of Domestic Animals**

By HUTYRA & MAREK

Two royal octavo volumes, 2151 pages, profusely illustrated, half leather binding, per set **\$15.00 delivered.**

**Send For Our Complete Catalogue of Veterinary Books**

In addition to our own publications, we carry in stock the books of all the other publishers. EXPRESS CHARGES, PREPAID ON ALL ORDERS.

**CHICAGO MEDICAL BOOK COMPANY**

Honore and Congress Streets, - - - - CHICAGO

**Air-Cushion Rubber Pads**  
 horse-Shoe

IDEALISM IN HORSE-SHOEING.  
 It follows closely nature's scheme in anatomy and physiology, and is therefore correct.



Many horses that are lame on any other pad or shoe will go sound on Air-Cushion Pads.  
 There is a reason. "Write us."

Don't be deceived by inferior substitutes.

**REVERE RUBBER CO., (Sole Mfrs.)** Boston, New York, Pittsburg,  
 Chicago, New Orleans.

## RELIABLE PREPARATIONS FOR THE VETERINARIAN

### CO. SOL. CRESOL.-MARTIN

(Contains 80% Pure Cresol)

A powerful concentrated antiseptic, antizymotic and germicide, when used in solutions of one-half to one per cent. strength. It forms a clear solution with all kinds of water, and is unsurpassed for all forms of surgical operations.

### CREOGEN-MARTIN

(The Veterinarians Antiseptic)

For many years this has been a standard pharmaceutical for the veterinary profession, and its wide range of usefulness in general practice has received the unqualified endorsement of the profession.

### CREOZOL-MARTIN

Prepared from standardized coal-tar creosote oil. Designed for dipping and disinfecting purposes in dealing with the diseases of livestock. Write for prices and full information on above preparations.

### MARTIN CHEMICAL CO.,

342-344 S. SCHUYLER AVE., KANKAKEE, ILLINOIS

# Veterinary Medicine

*Revised to Date. Standard and Worldwide in Comprehensiveness and Use*

**By JAMES LAW, F.R.C.V.S.**

Ex-Director N. Y. S. Vet. Coll. Emeritus. 50 years Teaching and Practice

*In 5 Vols. 8vo, 3277 pages*

- Vol. I.—Respiratory and Circulatory. New chapters on Blood and Lymph. pp. 557, \$4, 3d Ed., 1910.
- Vol. II.—Digestive, Hepatic, Tryptic. New chapters on Poisons, Ductless Glands, Hormones, Metabolism and Autointoxication. pp. 592, \$4, 3d Ed., 1911.
- Vol. III.—Nervous, Genitourinary, Eye, Skin, Systemic. pp. 611, \$4, 3d Ed., 1911.
- Vol. IV.—Microbian, Pestiferous, Prevention, Suppression, Exclusion, Micropathology, Serum Poisons, Serum Therapy, Immunization, etc. Scientific principles, general and specific. pp. 789, \$5, 3d Ed., 1912.
- Vol. V.—Parasites and Parasitism. Scientific Extinction. pp. 564, \$4, 2d Ed., 1909.

*Vol. IV. has General Index of Vols. I. to IV. 3d Ed.*

Order today from the author, ITHACA, N. Y.

Carriage paid on receipt of price.

# JUBILEE!

## YOURS and OURS

Congratulations on your 50th Anniversary! We feel a real kinship with you, for this is also our 50th anniversary.

For half a century we have been directing our best ability to your service. We have become noted as possessing the finest veterinary collection in the country, for we have always leaned in your direction.

Nevertheless, you will find our other departments just as well equipped. Fiction, philosophy, poetry are on our shelves—with never a book not to be had. Therefore, we invite your patronage in this field as well. We are also equipped to handle any orders for stationery, printing, engraving, etc. Why not let us send you several of our catalogues?

If you come to New York to the convention, do not fail to pay us a call. You are cordially invited to make our reading rooms your very own.

**Wm. R. Jenkins Company**  
Sixth Avenue at 48th Street, New York

### COMPLETE VOLUMES OF REVIEW FOR SALE.

FOR SALE.—American Veterinary Review. Vols. 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, complete. Clean. Bargain. S. R. Howard, Hillsboro, O.

### VETERINARY LOCATIONS:

Veterinary locations and practices handled in all states. Drug stores for sale and positions in drug stores. Nurses, physicians, dentists, furnished and located for practices. F. V. Kniest, R. P., No. 505 Bee Bldg., Omaha, Nebraska. Established 1904.

### VETERINARY PRACTICE FOR SALE.

Owing to other business interests which will require all my time and energy, I wish to retire from the veterinary business. This business includes Ambulance, Equine Operating Table, Canine Operating Table, Slings, Instruments, Cases, Drugs, Office Furniture and a practice of \$4,000.00 cash yearly in a city of 68,000 population with a pay day every day in the month except Sundays. I will remain with purchaser one month to acquaint him with city and business before leaving the city at my own expense. This practice must be sold immediately. Address George A. Schwartz, Room 2, 1016 14th St., Altoona, Pa.

## A YEAR OF UNPARALLELED SUCCESS

**VACCINE EQUINA.**—The only Specific Vaccine for EQUINE DISTEMPER, Etc., and PNEUMONIA. Immunizing and curative.

**VACCINE AGGRESSIN-MIXED.**—Indicated in Pus-forming conditions generally; also Laryngitis and Pharyngitis.

**DOG DISTEMPER VACCINE.**—Immunizing and curative.

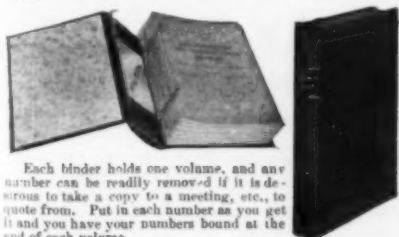
### THE COMPARATIVE VACCINE LABORATORIES, Inc.

Literature on request.

214 Livingston Street, Brooklyn, N. Y.

### THE "BIG BEN" BINDER

The binding of magazines in this binder is as easy as filing papers. No punching of holes is necessary. The bound matter opens flat to any page, even more so than a regularly bound book.



Each binder holds one volume, and any number can be readily removed if it is desired to take a copy to a meeting, etc., to quote from. Put in each number as you get it and you have your numbers bound at the end of each volume.

CLOTH WITH GOLD LETTERING, PRICE, \$1.00

Address AMERICAN VETERINARY REVIEW  
509 WEST 123d ST., NEW YORK, N. Y.

## Just Enough

and just as they want it. The right way to salt animals is to let them help themselves.

### Compressed Pure-Salt Bricks

In our Patent Feeders, supply refined dairy salt. They mean animal thrift. They cost but little.

Convenient for you and your animals suffer no neglect. Ask your dealer and write us for booklet.



Belmont  
Stable  
Supply Co.  
Patentees, Mfrs.  
Brooklyn,  
N. Y.



# INDIANA VETERINARY COLLEGE

CONFERS THE DEGREE OF

DOCTOR OF VETERINARY MEDICINE

Write for Catalogue

804 E. Market St. Indianapolis, Indiana

## NEW YORK STATE VETERINARY COLLEGE,

ESTABLISHED AT

CORNELL UNIVERSITY, ITHACA, N. Y.

BY CHAPTER 153, LAWS OF 1894.

This college is well equipped with modern facilities for scientific and practical instructions for undergraduates and post-graduates. Most varied practice for students in the free clinics. Regular graded course, three years of nine months each. Entrance by Regents' "Veterinary Student Certificate," or by examination, September 12th, 1913. Matriculation September 23d, 1913.

✻ ✻ ✻ Tuition Free to New York State Students.

For extended announcement address,

Professor VERANUS A. MOORE, Director.

## VETERINARY COLLEGE OF THE ALABAMA POLYTECHNIC INSTITUTE

AUBURN, ALA.

Course three years of nine months each

Entrance requirements 12 high school units. The only Veterinary College in the South. Ideal place for students who wish to escape the rigorous winters of the North. Ample clinical material.

Tuition only \$20.00 a year for non-residents of Alabama

For Catalogue address

C. A. CARY, Dean

## CHICAGO VETERINARY COLLEGE

2533, 2535, 2537 and 2539 State Street, Chicago, Ills.

Organized and Incorporated under the Laws of the State of Illinois, 1883.

Regular Session commences on or about September 15th in each year.

For Prospectus giving all information as to curriculum, fees, etc., address the President

JOSEPH HUGHES, M.R.C.V.S.,

2537 and 2539 State St., Chicago, Ills.

# **New York State Veterinary College**

Established at

**New York University in the City of New York**

By Chapter 676 Laws of 1913

**FORMERLY NEW YORK-AMERICAN VETERINARY COLLEGE**

(New York College of Veterinary Surgeons, Chartered 1857, and  
American Veterinary College, Chartered 1875).

**SESSION 1913-1914 BEGINS SEPTEMBER, 1913**

Free Scholarship to One Student from each Assembly District

**Laboratory Facilities and Clinical Advantages Unsurpassed**

Write for New Catalogue and All Information to

**W. J. COATES, M.D., D.V.S., Dean**

141 West 54th Street

New York City

---

**PULMONARY EMPHYSEMA, "BROKEN WIND,"  
"HEAVES," and all Bronchial Affections  
successfully treated with**

## **VERGOTININE**

"A precious therapeutic product."

—Dr. Gambarotta, Royal Vet. School, Turin.

"The only product capable of ameliorating and curing that disease."—Dr. Bernaud, Chief Vet., Compagnie des Voitures Parisiennes l'Urbaine, Paris.

"An energetic reconstituent . . . and dynamic tonic."—Dr. H. Perrin, Chief Military Veterinarian.

---

**VERGOTININE** has been used very successfully in America for several years in the treatment of the above referred to conditions by a large number of veterinarians. Further particulars furnished on request.

---

Sole Distributers for United States, Canada and Mexico

**PASTEUR LABORATORIES OF AMERICA**

New York : 366-368 West 11th St. Chicago : 443-445 So. Dearborn St.

# PETROGEN—WYETH

---

A non-irritating, highly penetrating and soluble medium for the administration of medicaments which ordinarily prove difficult of use because of their irritating properties.

**Petrogen** is particularly well adapted for veterinary practice for the administration of iodine.

**Iodine-Petrogen** will cause no irritation or blistering, nor will its continued application result in a falling out of the hair, or cause any permanent staining.

**Iodine-Petrogen** is indicated in all forms of sprains, stiff joints, shoulder lameness, swellings, bone enlargements, and all conditions where a stimulating action on the glands and blood-vessels is required.

**Iodine-Petrogen** may be employed freely and indefinitely without producing the tendency to blister, which so often precludes entirely the use of the tincture of iodine.

---

LITERATURE AND SAMPLES OF IODINE-PETROGEN, OR OTHER PETROGEN COMBINATIONS, WILL BE SUPPLIED ON REQUEST

---

JOHN WYETH & BROTHER, Inc.

PHARMACEUTICAL CHEMISTS,

PHILADELPHIA

# THE MARK: "NORWICH"

Applied to remedies used in human and veterinary practice, carries with it the guarantee of excellence based on more than a quarter-century of successful manufacture and development of high-grade pharmaceuticals. This applies to our complete line of assayed fluid-extracts, tinctures, hypodermics, ointments, boluses, tablets, etc., as well as to our specialties.

## "A-V-C" BLISTER

Made from fresh, pure materials, according to the formula of the American Veterinary College, this gives results away ahead of mercuric iodide and cantharides preparations. Our facilities for manufacture enable us to offer this superior product at a low cost.

## VETRINOL POWDER

An ideal antiseptic and astringent dusting powder, approved by veterinarians as a superior dry dressing in burns, sores, cuts, wounds and other affections of the skin. It heals rapidly without causing irritation. Furnished in convenient sprinkler boxes.

## THE NORWICH PHARMACAL CO.

Laboratories and Main Offices: Norwich, New York

New York City Branch: 60 Beekman St., Corner Gold

Telephones: Beekman 3910 and 3911

Chicago Branch: 1100-1108 W. 37th St.

Kansas City Branch: 1424 Walnut St.

## SIMPLICITY EQUINE OPERATING TABLE



Has all movements necessary for all surgical operations.

The base rests on circular bearings enabling the operator to rotate the field of operation to the light.

By shifting a single lever, the table can be inverted, placing the patient in

position for inferiorly located operations, such as Umbilical Hernia, Scrotal Hernia, etc.

Veterinary Specialty Mfg. Co., Holland, Mich.

THERE IS NOTHING TO EQUAL

## SPRATT'S Dog Cakes and Puppy Biscuit



They are the best in the world and will keep your dog in good condition the year round.

If your puppies are doing "poorly" feed

## SPRATT'S MILK FOOD

Invaluable for weaning, for feeding brood bitches, invalid dogs, etc.

Write for samples and prices, and send 2 cent stamp for "Dog Culture," which contains valuable information.

SPRATT'S PATENT LIMITED.

FACTORY AND CHIEF OFFICES  
AT NEWARK, N. J.

# THE OHIO STATE UNIVERSITY

---

## COLLEGE OF VETERINARY MEDICINE

---

Columbus, O.

Offers a three year graded course leading to the degree of Doctor of Veterinary Medicine. Unexcelled laboratory and clinical facilities. New buildings especially designed for teaching veterinary medicine according to the most approved modern methods. Faculty of specialists devoting whole time to teaching. For College Bulletins address DAVID S. WHITE, Dean.

---

## THE GEORGE WASHINGTON UNIVERSITY

---

### College of Veterinary Medicine, Washington, D. C.

---

Offers a graded four year course leading to the degree of Doctor of Veterinary Medicine (D.V. M.), beginning with the session 1912-13.

This course is designed for well educated young men employed in the government service or elsewhere during the day. Lectures begin at 5. P. M.

School recognized by American Veterinary Medical Association, U. S. Civil Service Commission, U. S. Bureau of Animal Industry and State Examining Boards.

Clinics, hospitals, military posts, government laboratories and experiment stations located at the National Capital give students superior advantages in acquiring a broad education in veterinary science. For catalog, address

DAVID E. BUCKINGHAM, V. M. D.

Dean of Veterinary Faculty,

2113-15 FOURTEENTH ST., N. W.

---

## The Kansas City Veterinary College,

---

N. W. Corner 15th St. and Lydia Ave.

Kansas City, - - - Missouri.

A three year graded course. Daily clinical instruction. Excellent laboratory equipment. Graduates are eligible to membership in the American Veterinary Medical Association, also eligible to appointment as U. S. Veterinary Inspectors and as U. S. Army Veterinarians. . . .

FOR CATALOGUE, ADDRESS

.... S. STEWART, Dean.

---

## UNIVERSITY OF PENNSYLVANIA.

---

### SCHOOL OF VETERINARY MEDICINE.

---

*The course of instruction is graded and extends over three years, with one session beginning the 4th Friday in September, and ending the 3d Wednesday in June in each year.*

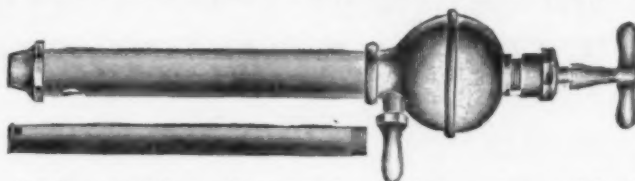
Practical Instruction, including Laboratory Work in Pharmacy, Chemistry, General Biology, Histology, Physiology, Comparative Osteology, Dissecting, Botany, Pathology, Bacteriology, and Inspection of Meat and Milk, with personal care and treatment of animals in the hospitals and clinics, is a part of the regular course without additional expense.

Graduates of this school are eligible for membership in the American Veterinary Medical Association.

For Catalogue, Address LOUIS A. KLEIN, V.M.D., Dean of Veterinary Faculty,

Dept. F, Cor. 39th St. and Woodland Ave., Philadelphia.

## THE SIMPLEX CONTINUOUS FLOW PUMP

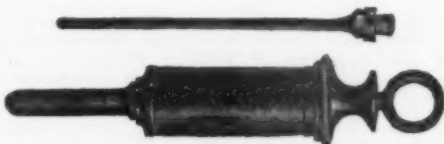


Is made of solid brass and nicely nickel plated. It is an actual continuous flow pump, simple

of construction and easy acting. Gives perfect satisfaction wherever used. Price \$5.25.

### Heavy Brass Dose Syringes

Nickel plated, 2 oz. size, with 2 pipes. \$1.00 each; half dozen, \$5.50; dozen, \$10.00.



New Standard Veterinary Thermometer, with ring to hold cord. Same as recommended by the B. A. I. Price 60c. each; dozen, \$6.00.

**FRANK S. BETZ CO., Hammond, Ind.**

*The Largest Manufacturer in the World of Veterinary, Surgical and Dental Instruments and Supplies. Write for Catalog.*

ESTABLISHED 1851.

INCORPORATED 1897.

## EIMER & AMEND, WHOLESALE DRUGGISTS,

205, 207, 209 and 211 THIRD AVENUE, NEW YORK CITY

**MAKE A SPECIALTY OF ALL**

**Drugs, Extracts, Tinctures, Chemicals,  
Etc., Etc., Used in Veterinary Practice.**

**E. and A.'s VETERINARY GLYCERIN SUPPOSITORIES.**

**SULFGLYCEROLE FOR SKIN LESIONS.**

**SULFGLYCEROLE OINT. FOR SCRATCHES.**

**SOLE AGENTS FOR**

**H. HAUPTNER, BERLIN, GERMANY,**

**VETERINARY INSTRUMENTS.**

**Write for Catalogue !!!**



PASTEUR-NEW YORK • CABLE ADDRESSES • PASTEUR-CHICAGO

PARIS • LONDON • HAVANA • MANILLA • MEXICO • MONTREAL • SIDNEY

# PASTEUR LABORATORIES

OF AMERICA  
BIOLOGICAL PRODUCTS

NEW YORK 366 368 WEST 117<sup>th</sup> ST.

SAN FRANCISCO

CHICAGO 443 S. DEARBORN ST.

We are the sole concessionaires of the original and only genuine Pasteur's Anthrax Vaccine discovered by Profs. Pasteur, Chamberland and Roux.

For the prevention of Anthrax or Charbon in horses, mules, cattle, sheep and goats. Introduced by us into this country in 1895 and successfully used by veterinarians on over 40,000,000 animals.

#### Antistrangles Serum

For the prevention and cure of true strangles in horses.

#### Antistreptococcic Serum (Veterinary)

Indicated in all conditions due to streptococcus infection; notably Influenza, Distemper, Shipping Fever, Purpura, Hemorrhagica or Equine Anasarca. Furnished in liquid and dry form, the latter keeping indefinitely.

#### Antitetanic Serum (Veterinary)

The most reliable cure for Tetanus and an infallible preventive of that disease. Furnished in liquid and dry form, the latter keeping indefinitely.

#### Mallein and Mallein Solution

For the diagnosis of Glanders in horses and mules. Mallein Solution is ready for use and is furnished in one, two and five-dose packages.

#### Tuberculin and Tuberculin Solution

For the diagnosis of Tuberculosis. Tuberculin Solution is ready for use as sold and is furnished in one, two and five-dose packages.

#### Antivenomous Serum

Exerts a specific action against the venom of all species of poisonous reptiles. In dry and liquid form.

#### Blackleg Vaccine, Powder Form

#### Blackleg Vaccine, Cord Form

#### Blackleg Vaccine, Pellet Form

We are the sole concessionaires of the original and only genuine Blackleg Vaccine for the prevention of Blackleg in Cattle.

Produced exclusively for us by the discoverers, Professors Arloing, Cornevin and Thomas' heritiers. Furnished in the powder, cord, and pellet form and the single and double treatment. The latter should be used whenever possible and invariably upon pure-bred, highly-graded, or valuable stock. Successfully used by veterinarians on over 36,000,000 head.

#### Canine Distemper Serum

Principally a curative agent for Canine Distemper. It also confers a limited immunity.

#### Polyvalent Calf Dysentery Serum.

#### Hog Cholera Serum.

#### Eucamphol

An ideal Antiseptic, Disinfectant and Germicide. It is a compound of Eucalyptus Oil, Camphor Oil and Cresol, and is indicated in daily practice.

#### Lincoln Disinfectant

For general and extensive disinfecting; compares favorably with any general disinfectant on the market.

#### Traumatol (Iodocresine)

A powerfully Antiseptic, Cicatrisant and non-toxic Microbicide. Furnished in Solution, Powder and Vaseline.

#### Pasteur Laboratories Rat Virus

For the scientific destruction of rats, mice and moles. Harmless to human beings, domestic animals, birds, etc.

# JUST PUBLISHED

## BOVINE TUBERCULOSIS AND ITS CONTROL

By VERANUS ALVA MOORE, B. S., M. D., V. M. D.

Professor of Comparative Pathology and Bacteriology,  
New York State Veterinary College, at Cornell University.

It has seemed for those who are intelligently working to eradicate this scourge, benefit would be derived from bringing together the results of the more important investigations on the nature, diagnosis and various methods for the control of this disease. It is well to keep in mind the words of the great Pasteur: "It is within the power of man to eliminate the infectious diseases from the face of the earth." To accomplish this for Tuberculosis requires full knowledge of its cause, morbid anatomy, means by which it is disseminated and methods for its control.

Pages X + 164 and 30 full page plates. Cloth. \$2.00 net Postpaid.

The illustrations are unexcelled by those in any Medical Text-book.

---

### VETERINARY PUBLICATIONS

The Pathology and Differential Diagnosis of Infectious Diseases of Animals. Moore . . . . .	\$4.00
The Principles of Microbiology. Moore . . . . .	\$3.50
Veterinary Obstetrics. Williams . . . . .	\$8.00
Surgical and Obstetrical Operations. Williams . . . . .	\$2.50
Veterinarian's Handbook of Materia Medica and Therapeutics. Udall. . . . .	\$1.50
General Surgery. Frohner translated by Udall . . . . .	\$3.00
Veterinary Doses and Prescription Writing. Fish . . . . .	\$1.50
Examination of the Urine of the Horse and Man. Fish . . . . .	\$1.50
Elementary Exercises in Physiology. (Laboratory Manual) Fish . . . . .	\$1.50
Elementary Exercises in Materia Medica and Pharmacy. (Laboratory Manual) Fish . . . . .	\$1.50
The Clinical Pathology of the Blood of Domesticated Animals. Burnett . . . . .	\$2.50
Pure Milk and the Public Health. Ward . . . . .	\$2.00

ABOVE PRICES NET, POSTPAID

## CARPENTER & CO.

Ithaca, N. Y.

## RESTRAINT OF DOMESTIC ANIMALS.

### **A Book for Students and Practitioners**

By **GEORGE R. WHITE, M. D., D. V. S., Nashville, Tenn.**

Over 300 pages, with 332 illustrations made from drawings by one of the best pen artists in the United States. It illustrates and fully describes every known means of **RESTRAINT** of the Horse, Ox, Dog and Hog. This is by far the **best illustrated book** ever written in America on any branch of Veterinary Science. Published by the Author. For sale by all veterinary booksellers. Sent post or express prepaid to any address upon receipt of price.

"**Restraint of Domestic Animals**" has already been adopted as a **Text Book** in 18 of the 21 Veterinary Colleges of America. Its sale has been phenomenal.

Every practitioner should secure a copy for study and reference. **PRICE, \$3.75.**

## **Red • Ball • Brand • Stock • Food.**

**Purely Vegetable. Not a Secret Preparation. List of Ingredients Sent to Veterinarians on Application.**

Sold to Veterinary Surgeons in Bulk, they can make it into appropriate powders of 1 oz. to a dose.

**The most Uniformly Successful Digestive Regulator Known.**

Veterinarians throughout the country are using it and testifying to their successful treatment of digestive disorders.

Write for Circulars, Price List and Sample Package to

**ATKINS & DURBROW,**

**157 WATER STREET**

**NEW YORK.**

## **THE BRADWOOD MANUFACTURING CO.**



**THE HUMANE EQUINE OPERATING TABLE**

**OFFICE & FACTORY 125 WATER ST. NEW HAVEN, CONN.**

## **THE ST. JOSEPH VETERINARY COLLEGE**

**ST. JOSEPH, MO.**

Thoroughly modern and complete laboratory equipment, unexcelled clinical facilities. Over three thousand clinical cases used for instruction during the past session. Session of 1913 begins September 9. For prospectus and full information, address

**Dr. F. W. CALDWELL**

**7th and Sylvania Sts.**

## PHILLIPS VETERINARY SPECIALTIES.



Phillips "Perfected" Stomach Tube.  
Phillips Soft Rubber Catheter.  
Phillips "Continuous Stream" Injection Pump.  
Phillips "Faultless" Decayed Root Extractor.

Beware of  
imitations  
and so-called  
Phillips  
Tubes.



### PHILLIPS "PERFECTED" STOMACH TUBE.

In the May, 1904, number of the AMERICAN VETERINARY REVIEW, I wrote an article introducing the operation of siphoning the stomach of the horse for the instant relief and positive cure of Stomach Flatulence, Acute Indigestion, Gastritis and Choke.

To insure the operation becoming a success in every surgeon's hands, I had a tube of superior quality manufactured, having correct dimensions, consistency and certain markings, and styled it THE PHILLIPS "PERFECTED."

The success of the operation is unquestionably proven by public demonstrations at State and International Meets, by the Veterinary Colleges teaching and recommending the operation, by imitations manufactured and sold by Veterinary Supply houses, by other tubes manufactured that are complicated in structure and difficult to pass, and proven also by the fact that most veterinary instrument dealers have made a stomach tube their leading add since one year after The Phillips "Perfected" had proven its success.

The Phillips "Perfected" Tube with the accompanying Stilet furnishes the Surgeon with the finest Probing ever offered to the profession. Directions for using accompany each tube. Price \$3.00, less dealers discount of 25%, \$6.00 Cash.

### PHILLIPS SOFT RUBBER CATHETER.

PHILLIPS SOFT RUBBER CATHETER IS OF SUPERIOR quality, four feet long. Neither heat nor cold affect it. Its life with constant usage is from five to ten years. Used as a Tourniquet in foot operations it has no equal. Directions for using and stilet accompany each catheter. Price \$1.75, less dealers discount of 25%, \$1.31 Cash.

### PHILLIPS "CONTINUOUS STREAM" PUMP.

PHILLIPS "CONTINUOUS STREAM" STOMACH AND RECTAL INJECTION PUMP is made of solid brass, nickel plated, simple of construction and easy acting. This pump should accompany every Phillips "Perfected" Tube. No one should practice siphoning the stomach without using an injection pump. Attached to the tube it makes an IDEAL RECTAL INJECTION outfit. Price \$8.00, less dealers discount of 30%, \$5.60 Cash.

### PHILLIPS "FAULTLESS" DECAYED TOOTH EXTRACTOR.

The only extractor that operates within the alveolar cavity. Made expressly for roots and shells. Price \$3.00, less dealers discount of 30%, \$5.60 Cash. Send for circular for complete description of these Specialties.

Address all orders to, J. M. PHILLIPS, D. V. S.,

3732 WEST PINE BL'VD, ST. LOUIS, MO.

## "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1902.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with offsets, keeping the cheek pieces of the halter  $\frac{1}{2}$  to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped, is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

#### Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it inside the nose-band, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(For side-lines, 5 yards sash-cord, cut in two, snaps on one end.)

Price of Halter, \$10.00. For further particulars address T. C. D. F., Hamilton Grange Branch, New York P. O.

# BACILLOL

has been approved in competent literature as a germicide and as the most economical disinfectant, antiseptic and deodorant, whose invariable composition is assured by constant scientific supervision. The fact that it will readily saponify is an absolutely reliable guarantee of its prompt germicidal effect which wholly distinguishes it from the soluble Cresols now in the market, in regard to which it is known that they will not saponify.

**Prof. Dr. Liebreich** says:

The strong disinfecting qualities and the relative non-poisonousness of Bacillol should alone be an inducement to employ it. Besides these merits it deserves mention that it is much more agreeable to manipulate with this preparation than with others of a similar kind, because it makes instruments and utensils less slippery. Also the smell of "Bacillol" disappears readily, which is certainly a quality of some consideration in the treatment of the sick, and particularly for midwifery.

These are features which distinguish "Bacillol" advantageously from other disinfectants, the more so as its economical side claims special attention.

## Bacillol Vaginal Preparations

are acknowledged to be a Specific against Vaginal Catarrh, an infectious disease (see "American Veterinary Review," No. 1, 1907), the modes of application being as follows:

### **BACILLOL** Vaginal Sticks

These are cut up, in accordance with the graduations, into pencils which can be easily handled and thus provide an economical treatment, more particularly for the live stock of large cattle owners.

### **BACILLOL** Vaginal Cartridges

are frequently given the preference, especially for saving time, because they are easily applied. Both modes of treatment insure the radical and prompt eradication of the infectious vaginal catarrh.

### **BACILLOL** Cartridges for Dysentery in Calves

have successfully stood the test as a remedy for the prevention of Dysentery in calves, applied by introducing a few cartridges into the genital canals of the brood animal shortly before calving. The simplest, most reliable and most economical treatment for the prevention of Dysentery in calves.

Obtainable in the trade and from  
**Bruno Grosche & Co.**  
4 & 6 Jones Lane, New York



"C

A M  
THAN

1 No  
2

Sample  
Full Lit  
on Requ





# "CHINOSOL"

A MORE POWERFUL ANTISEPTIC  
THAN BICHLORIDE OF MERCURY

**But**

- 1 Non-poisonous
- 2 Does not coagulate albumin
- 3 Does no injury to membranes
- 4 Does no damage to tissues



- 5 Does not break down granulation
- 6 Causes no irritation
- 7 Has marked analgetic power
- 8 An instantaneous deodorant
- 9 Costs about three cents a quart

Sample and  
Full Literature  
on Request

CHINOSOL CO.  
PARMELE PHARMACAL CO.  
54 SOUTH ST., N. Y.

Abscesses

Inflamed  
Glands

Periostitis

Bog Spavin

Capped Knee

Infected  
Wounds

Harness  
Galls

Bruises



Burns

Distemper

Pneumonia

Caked Bag

Orchitis

Sprains

Scratches

Tendonitis

**For Any Inflammatory Condition. Apply Hot and Thick  
Cover With Absorbent Cotton**

Booklet and Spatula on Request

# **We PROVED the Phylacogens**

Before we placed a single dose of our Veterinary Phylacogens on the market, for more than a year our Veterinary Department of Experimental Medicine conducted a series of searching clinical tests of those products, submitting large quantities of both Phylacogens\* to skilled veterinarians in various parts of the United States.

Extensive experiments were also carried on under the personal supervision of our own veterinarians at various stock-yards and sale-stables in several large cities of the country.

Careful and complete records were kept of all cases treated. A summary of those records affords conclusive evidence of the therapeutic value of the Phylacogens.

\*Pneumonia Phylacogen (Veterinary) and Mixed Infection Phylacogen (Veterinary).

Ask for Our Booklet on Veterinary Phylacogens.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

## **MCKILLIP VETERINARY COLLEGE, CHICAGO.**

(CHARTERED 1892.)

**The faculty has been reorganized and strengthened by the addition of several specialists of national reputation.**

The equipment of this college is complete in every detail, furnishing the best opportunities for scientific and practical education.

**LARGEST PRACTICE IN THE WORLD.**

**Regular Graduate Course**, acquiring the degree of Doctor in Veterinary Medicine.

**Post-Graduate Course**, acquiring the degree of Doctor in Veterinary Medicine.

**School opens September 10th, 1913.**

Write for catalogue and other information

**GEORGE B. MCKILLIP, M. D. V., Secretary,**

**No. 1639 Wabash Avenue, Chicago.**





# Haussmann & Dunn Co.'s AUTO-CAUTERY

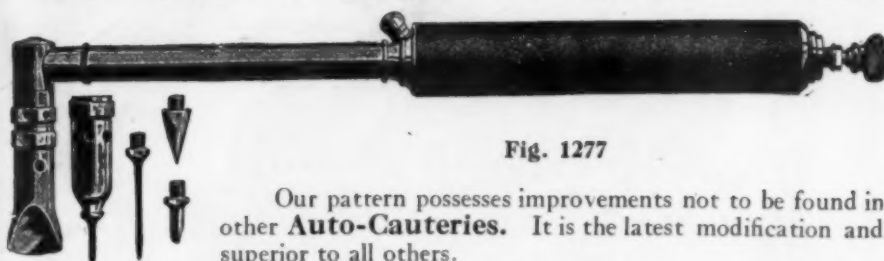


Fig. 1277

Our pattern possesses improvements not to be found in other **Auto-Cauteries**. It is the latest modification and superior to all others.

**Advantages.**—This instrument possesses many advantages over the usual forms of cauteries now in general use, the most important being its simplicity, ease of manipulation with one hand, and maintenance of temperature for nearly one hour, producing the maximum heating effect required for this mode of treatment. Full directions with each outfit.

WRITE FOR CATALOGUE

## PRICES

Complete in Cloth Roll with Alcohol Lamp and Wrench.....	\$15.00
With Ball Point Extra.....	16.50
Complete in Polished Wood Case with Alcohol Lamp, Wrench for Adjusting and 4-oz. G. S. M. C. Bottle for Ether.....	18.00
With Ball Point Extra.....	19.50

## HAUSSMANN & DUNN CO.

Veterinary Surgical Instruments  
Text Books and Supplies

708 S. Clark Street, Chicago.

"WHERE THERE IS PUS"

## Poly-Valent Bacterins

Successfully used in the treatment of abscesses, wire cuts, nail punctures, poll evil, fistulous withers, open joint, strangles, lymphangitis, cellulitis, septic arthritis, quittor, etc.

6 ampules (2 c. c. each) in package.

## Influenza Vaccine

A dependable product of proven value, used as an *immunizing* and *curative* agent in the treatment of influenza, shipping fever, yards fever, acclimation fever, and febrile diseases of bacterial origin in horses and mules.

6 ampules (2 c. c. each) in package.

Our Biologics Are Prepared Under Government Supervision  
(U. S. Veterinary License No. 22)

## Accuracy Laboratories

1714 and 1716 West Madison St.

Chicago, Ill.



Painstaking comparisons made repeatedly  
by the most famous veterinarians of  
the world have established the fact that—

## **Glyco-Heroin (Smith)**

is decidedly the most reliable remedy for  
COUGH, BRONCHITIS, LARYNGITIS AND PNEUMONIA  
IN HORSES, CATTLE OR DOGS

Its action is more prompt than that of any  
other remedy, and no danger whatever attends  
its proper administration.

Glyco-Heroin (Smith) promptly checks  
cough, relieves suffocative breathing, liquefies  
bronchial and pulmonary exudations, allays  
fever, alleviates pain, overcomes nervousness  
and restores the appetite.

---

DOSE: For horses or cattle,  
one ounce every two or three  
hours. For dogs, from ten  
drops to one-half teaspoonful.

SUBSTITUTION. To insure entirely  
satisfactory results, it is necessary to em-  
phasize the name "Smith" when prescrib-  
ing, for many worthless imitations of Glyco-  
Heroin are dispensed by unscrupulous  
dealers.



---

**MARTIN H. SMITH COMPANY**  
NEW YORK, N. Y. U. S. A.

TRADE



MARK



## The Kny-Scheerer Co.

404 to 410 West 27th Street,  
New York, U. S. A.

MANUFACTURERS OF

Veterinary Instruments of Superior Quality.

*Write for our Illustrated Catalog.*

# ONTARIO VETERINARY TORONTO COLLEGE CANADA

Under the control of the  
Department of Agriculture of Ontario  
Affiliated with the University of Toronto

**COLLEGE RE-OPENS WEDNESDAY, 1st OCTOBER, 1913**

N. B.—A short course on the Surgical and Medical Treatment of Wild  
Animals in Confinement will be given as a new subject this year.  
Calendar Sent on Application.

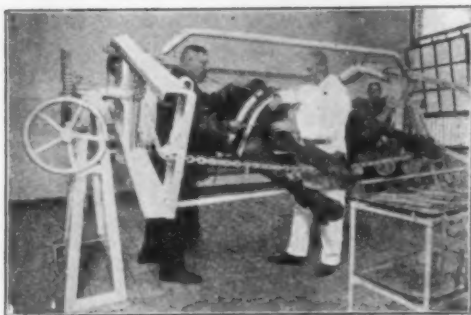
**E. A. A. GRANGE, V.S., M.Sc.,**  
*Principal*

When attending the FIFTIETH ANNIVERSARY MEETING

## DO NOT MISS

TO EXAMINE THE

### Best Veterinary Equine Operating Table



A. S. P. C. A. Surgeon operating on a horse at 24th Street and Avenue A., New York City.

In  
The  
World

The latest model is in use at the large, new hospital of the American Society for the Prevention of

Cruelty to Animals, which you can reach from Hotel Astor very conveniently, by taking a Broadway car downtown to 23d Street and transferring on 23d St., East.

A letter recently received from the above Society reads as follows:

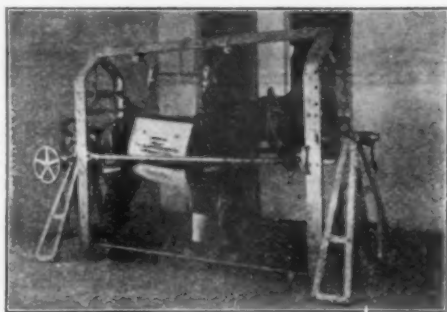


Table in use as Surgical Chair at Washington State Veterinary College.

We are very much obliged to you for your favor of November 2d, enclosing interesting photographs of the humane equine operating table recently purchased of your company, and installed by the Society at its new Hospital for Animals. This table was purchased after a thorough inquiry into the subject of operating tables for horses, and the results, so far obtained with it have fully justified our decision to use it in what we believe to be the most modern and thoroughly equipped hospital for animals in the world.

For prices, etc., inquire at our salesroom.

## THE KNY-SCHEERER CO.

404-410 West 27th Street

Cor. 9th AVENUE,

NEW YORK CITY

## MODERN VETERINARY MEDICINES OF MERIT

**DYMAL**, antiseptic, odorless, non-poisonous, non-irritating and siccative powder, indicated in cuts, lacerations, contusions, burns, weeping as well as dry eczema; applied as powder or ointment; an ideal substitute for iodoform.

**LAVISOL**, a powerful antiseptic and disinfectant, stable, non-toxic, clearly soluble in water, safer and more effective than carbolic acid or bichloride or mercury, of particular value in the different forms of mange.

**BOVOVACCINE**, Prof. von Behring's immunizing antitubercular substance, endorsed by members of the veterinary profession and successfully used by representative dairymen and breeders of cattle.

**TUBERCULIN** (Behringwerk).

**GALLOGEN**

Intestinal astringent, antiseptic and germicide.

**CLINICAL THERMOMETERS**  
**HYPODERMIC SYRINGES**

**ANTITETANIC SERUM**

(von Behring), in ready-for-use syringes of 1,500 and 3,000 Units.

**VALIDOL**

Analeptic and sedative in collapse and vomiting of dogs and cats.

**C. BISCHOFF & CO., Inc.**

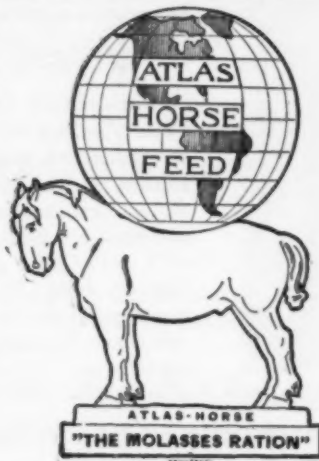
451-453 Washington Street,

New York, N. Y.

## ATLAS HORSE FEED merits the veterinarian's thoughtful consideration.

### IT IS NOT

a medicine, nor a condimental food; neither does it contain any drugs or chemicals whatever, nor should it be confused with so called "patent feed."



### IT IS

a genuine molasses ration made on scientific principles and rich in pure Louisiana cane molasses. Highly nutritive, thoroughly digestible, and infinitely more convenient than mixing your own molasses feed.

*Full particulars furnished upon application to*

## The Meader-Atlas Co.

New York Office: 105 and 107 HUDSON STREET.

# Antistreptococcic Serum, Veterinary

(PARKE, DAVIS & CO.)

This product is obtained from the blood of horses which have been immunized to highly virulent cultures of streptococcus erysip-



elatis and other strains. It is passed through sterilized filters and subjected to the most rigid bacteriological and physiological tests. It is of value in all cases of

## STREPTOCOCCIC INVASION.

It has been used with excellent results in the treatment of infectious anemia, septicemia, pyemia, etc., and is believed to be serviceable in strangles, bronchitis, pneumonia, distemper, influenza, and other conditions due to invasion of streptococci.

♦ ♦ ♦

Antistreptococcic Serum (P. D. & Co.) has proved especially successful in

## PYEMIC ARTHRITIS.

For example: Dr. John Spencer, former Chief Veterinarian to the Virginia College of Agriculture, tells of a number of cases treated, the death-rate being greatly reduced. He suggests that in districts where the disease is frequent, a prophylactic dose of 5 to 10 Cc. be given on the eighth and fifteenth days. This, together with proper treatment of the umbilicus at birth, he says, will generally prevent all trouble. (*Send for reprint.*)

### ANTISTREPTOCOCCIC SERUM, VETERINARY.

Bio. 721.	10 Cc. in syringe container (supplied on unspecified orders),	per pkg.,	\$1.10
Bio. 722.	10 Cc. in rubber-stoppered bottles,	per pkg.,	1.10
Bio. 723.	In ounce vials,	per oz.,	2.00

LITERATURE ON REQUEST.

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

# TALLIANINE

TRADE MARK REGISTERED.

Administered by intravenous injections through the jugular vein, and has been demonstrated to be the most rational and positive treatment for

PNEUMONIA of all forms and at all stages,  
PURPURA HEMORRHAGICA, PULMONARY CONGESTION,  
TYPHOID FEVER and allied diseases,  
INFLUENZA, SEPTICAEMIA, PYAEMIA and  
all septic conditions,  
DISTEMPER, SHIPPING FEVER, SUNSTROKE and  
HEAT EXHAUSTION.

Excellent results have also been obtained by its use in the treatment of Laryngitis, Thermic Fever, Pleurisy, Septic Metritis, Nephritis, Infectious Fever and Wet Eczema.

---

A TRIAL WILL CONVINCE THE MOST SKEPTICAL.

---

To be ordered from all druggists and veterinary supply dealers  
or from the sole agents.

**WALTER F. SYKES & CO.,**  
**85 WATER STREET, NEW YORK.**

132 Chestnut St., PHILADELPHIA, PA. 113 Broad St., BOSTON, MASS.

WESTERN AGENTS

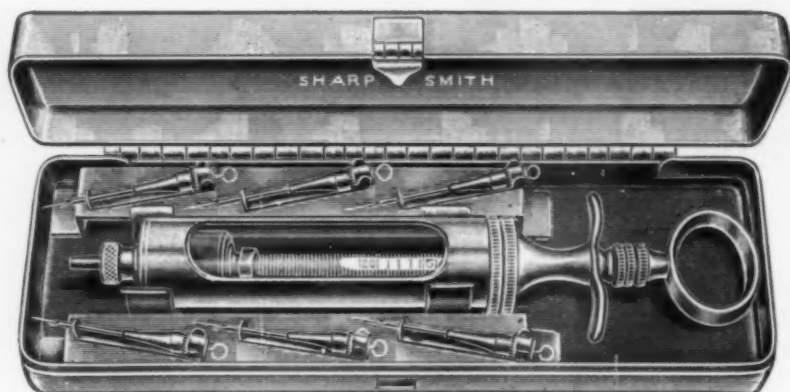
R. R. STREET & CO., 184 Washington Street, CHICAGO, ILLS.

DESCRIPTIVE MATTER SENT UPON REQUEST



# **NYE PERFECTED HOG CHOLERA SYRINGES**

Extra Heavy, with Expanding Rubber Plunger, Heavy  
Glass Barrel and Screw Set Net for Regulating Dose



2 C C Syringes, graduated in $\frac{1}{4}$ C C for virulent blood injection, complete in metal case, with 4-16 gauge reinforced needles	price	- - - -	\$3.00
2 C C Syringe, only, graduated in $\frac{1}{4}$ C C, no case or needles, each	- - -	- - -	1.50
20 C C Syringes, graduated in cubic centimeters, in leather covered case, with 6-16 gauge reinforced needles	price	- - - -	4.00
20 C C Syringe, graduated in cubic centimeters in all metal aseptic case, with 6-16 gauge reinforced needles	price	- - - -	5.50
20 C C Syringe, only, graduated in cubic centimeters, glass barre, without case or needles, each	- - - -	- - -	2.50
20 C C Syringe, graduated in cubic centimeters, all metal aseptic, with metal plunger in leather case, with 6-16 gauge reinforced needles	- -	- -	4.00
30 C C Syringe, graduated in cubic centimeters, with 6-16 gauge reinforced needles in leather covered case	price each	- - - -	4.50
30 C C Syringe, graduated in cubic centimeters, in all-metal aseptic case, complete, with 6-16 gauge reinforced needles, each	- - - -	- - -	6.00
30 C C Syringe, graduated in cubic centimeters, only, without case or needles, each	- - - -	- - -	3.00
60 C C Syringes, graduated in 5 C C, complete in leather covered case, with 6-16 gauge reinforced needles, each	- - - -	- - -	8.00
60 C C Syringe, graduated in 5 C C only, without case or needles, each	- - -	- - -	6.00
16-gauge reinforced needles for above Syringes, each	- - - -	- - -	.25
Per dozen	- - - -	- - -	2.25

Special prices in dozen and gross lots. Write for same.

"The 20 c. c., 30 c. c. and 60 c. c. Syringes are furnished with either ring or saddle top."

## **SHARP & SMITH**

Manufacturers, Importers and Exporters of High Grade  
Veterinary Instruments and Supplies

**103 N. WABASH AVE.,**

**CHICAGO, ILL.**

UNITED STATES  
CANADA  
MEXICO  
WEST INDIES

GREAT BRITAIN  
IRELAND  
AUSTRALIA  
NEW ZEALAND

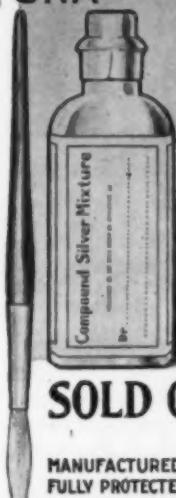
HAWAII  
PHILIPPINES  
INDIA  
SOUTH AFRICA

# M·A·C

MISTURA

ARGENTI

COMPOSITA



## THE MODERN TREATMENT

FOR SPLINTS, SPAVING, CURBS, SIDE BONES, RING-  
BONES, QUITTOR, SHOE BOILS, OSSIFICATIONS, IN-  
FLAMED TENDONS, BURSAL LAMENESS, ETC.

## ADVANTAGES

CAN BE APPLIED IN A FEW SECONDS.  
DOES NOT SOIL THE HANDS AS IT IS APPLIED  
WITH THE BRUSH WHICH ACCOMPANIES EACH  
BOTTLE.  
DOES NOT BLEMISH THE HORSE NOR INTER-  
FERE IN ANY WAY WITH HIS DAILY WORK.  
MORE PROMPT THAN BLISTERS IN EVERY CASE.  
IN ACUTE OR SUB-ACUTE CASES, BETTER THAN  
FIRING.

**SOLD ONLY TO VETERINARIANS**

OR ON THEIR ORDER

MANUFACTURED AND FULLY PROTECTED BY **CARTER-LUFF CHEM. CO. HUDSON, N.Y.**

## PRICES TO THE PROFESSION (DELIVERED)

SINGLE BOTTLE	- - \$2.00	1/4 DOZEN	- - \$5.00
1/2 DOZEN	- - - \$8.00	ONE DOZEN	- \$15.00
TWO DOZEN	- - \$25.00		

NO DISCOUNTS IF ORDERED OF DEALERS.

A DIVIDEND OF ONE BOTTLE FREE WITH EACH 1-4 DOZEN, TWO FREE WITH  
1-2 DOZEN, FOUR FREE WITH ONE DOZEN, AND EIGHT FREE WITH TWO DOZEN  
WILL BE GIVEN IF THE ORDER IS SENT DIRECT TO THE MANUFACTURERS

**CARTER-LUFF CHEM. CO. HUDSON, N. Y.**

(OVER)

Handling Horses made easy by using the Veterinarian's  
Favorite Ambulance.



**RECH-MARBACHER CO.,**

**SPECIALISTS—DESIGNERS.**

**MAKERS OF HIGH GRADE AMBULANCES.**

**Girard Ave. and 8th St.,**

**PHILADELPHIA, PA.**

*Send for information and catalogue.*

**SERUMS :**

Tetanic  
 Streptococcic  
 Distemper and Influenza  
 Hog Cholera

**BACTERINS :**

Anti-Suppurine  
 Pneumonia  
 Streptocine  
 Influenza

**VACCINES :**

Anthrax  
 Black Leg  
 Hog Cholera

## ANTI-SUPPURINE

A polybacterial vaccine or bacterin for the treatment of Suppurating Conditions in Veterinary practice. Has been very extensively and successfully used since the spring of 1910.

In packages of 6 vials of 2 c. c., each, \$1.50; or \$15 per dozen packages.

In vials of 20 c. c., \$2; or \$20 per dozen.

 In liquid form ready for use.

## EUCAMPHINE

A compound of eucalyptus and camphor oils, cresylic acid, and saponaceous oils. Indications: Internally, whenever an antiseptic, antiperiodic, antiferment or antispasmodic is required. Externally, employed as a wash, douche, and dressing. High-class, agreeable and effective disinfectant and deodorant.

Pints,	\$ .50	Gallons,	\$3.00
5-pints,	\$2.00	2-gallons,	\$5.50
		5-gallons,	\$12.50

## GUAIALYPTOL

Eucamphine with Guaiacol. Indications:— All catarrhal affections of the respiratory and intestinal tracts, and notably for treatment of Laryngitis, Pharyngitis, Bronchitis, Oedema Glottidis, Influenza, Distemper, Strangles, Infectious Diarrhea, Septicemia, Gastric or Intestinal Flatulence, etc. It is also serviceable in Pneumonia.

Pints, \$ .75	5-pints, \$2.50	Gallons, \$4.00
---------------	-----------------	-----------------

 Ask for samples, and get acquainted with Eucamphine and Guaialyptol.

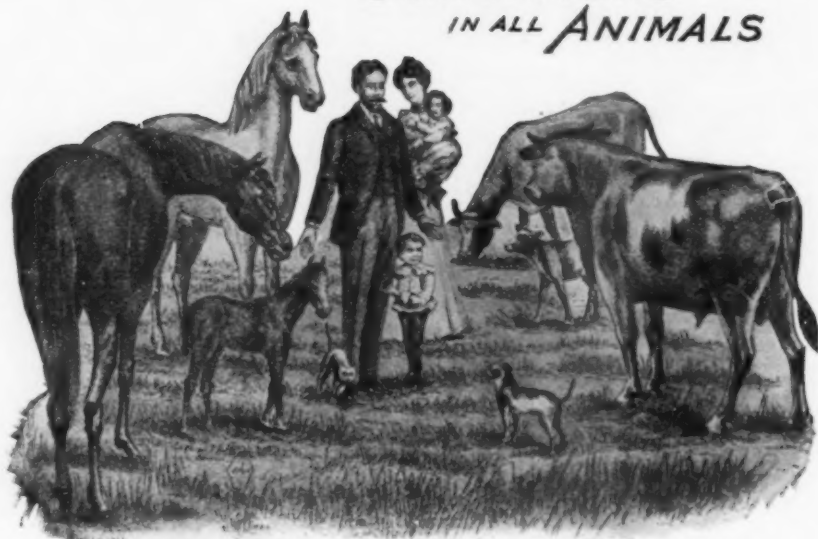
### THE CUTTER LABORATORY OF ILLINOIS CHICAGO, ILLINOIS

Eastern Supply Depot  
**KALISH PHARMACY**  
 Twenty-third St. & Fourth Ave.  
 NEW YORK CITY

Missouri Valley Supply Depot  
**ST. JOSEPH VETERINARY  
LABORATORY**  
 ST. JOSEPH, MO.

# Sanmetto

FOR THE  
GENITO-URINARY  
CONDITIONS  
IN ALL ANIMALS



[The Tender-Hearted Veterinarian with Wife, Daughter and little Son in the midst of his Patients that seem to reciprocate his kindness.]

A POSITIVE REMEDY  
—IN—  
**DISEASES OF THE GENITO-URINARY ORGANS**  
—OF—  
**THE HORSE AND DOG AS WELL AS MAN**

Doctor, when you have a Horse or Dog suffering from Kidney, Bladder or Urethral Trouble; or from any Irritation or Inflammation of the Urinary Tract; or from Impotency or Sterility,

**ORDER SANMETTO**

Sanmetto is largely used in Veterinary Practice for the above troubles and has been found Worthy and Reliable. It is also strongly endorsed and much used in AZOTURIA—many cases reported cured with it. Sanmetto acts as a vitalizing tonic to the Genito-Urinary Organs. It is eliminated from the System almost entirely through the Kidneys and Bladder—hence its soothing, healing and tonic power upon the entire Urinary Tract.

To avoid substitution, order thus: R, SANMETTO—one bottle—original package.

DOSE:—For Horse, one ounce three times a day. For Dog, one teaspoonful three times a day.

Price One Bottle, \$1.00. Case of One Dozen Bottles, \$8.00. Sold by all Reliable Druggists  
Pamphlet on application to **OD CHEM. CO., New York.**



- V/1441. **The Queen City Continuous Flow Injection and Suction Pump.** This pump is the best pump made for stomach tube, as it can be used for injection or suction, and is continuous flow. It is made of heavy brass throughout, heavily nickel plated, no parts to rust or get out of order. 16 in. long. **Special Price.** pump only . . . . . \$3 50
- V/1442. **Queen City Pump,** with six feet heavy, white, non-collapsible tubing and wood nozzle. **Special Price** . . . . . 5 00
- V/1443. **Queen City Pump,** with Woche's 10-foot maroon rubber Stomach Tube and Stilet. **Special** . . . . . 7 50

We carry a complete line of Auto-Cauteries, Roaring Instruments and many new designs of other instruments. Submit your wants to us.

*Complete Veterinary Catalogue sent Free upon request.*

## THE MAX WOCHER & SON CO.,

Manufacturers of High Grade Veterinary Instruments and Hospital Supplies.

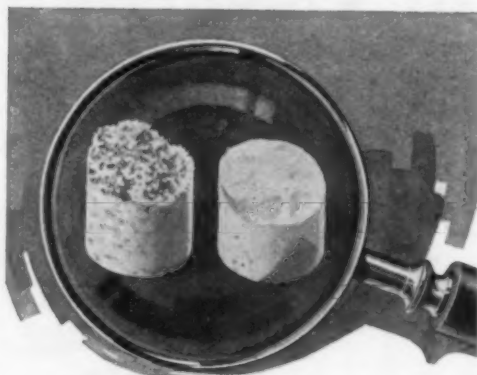
19-21-23 6th AVE. WEST :: :: CINCINNATI, OHIO.

### Have You Magnified Any Hypodermic Tablets?

If readily soluble—as they should be—they present a granular, porous appearance so characteristic of the

#### BEEBE HYPODERMIC TABLETS

In these, all good features are combined to make them RIGHT.



A SOLUBLE AND AN INSOLUBLE TABLET

<b>Soluble</b>	<b>Standardized Medication</b>	<b>Keep Permanently</b>
<b>Accurate Dosage</b>	<b>Excipient does not impair medication</b>	<b>Do not crumble</b>
	<b>Size and shape most convenient</b>	

Made in all standard medications and furnished at moderate prices. You will eventually use them since you are looking for the best, why not order now? Our process of making originated with us.

**BEEBE BIOLOGICAL LABORATORIES,** ST. PAUL,  
U. S. A.



NEW VETERINARY BOOKS  
**A SYSTEM OF VETERINARY MEDICINE**

By various writers. Edited by  
 E. WALLIS HOARE, F.R.C.V.S.

To be complete in two handsome volumes. Volume 1 is now ready, 1366 pages, half leather. Price for the set, for advance orders, **\$15.00 delivered.** (Terms: \$7.50 upon delivery of first volume; \$7.50 when volume 2 is ready.)

NOW COMPLETE

**Special Pathology and Therapeutics of Domestic Animals**

By HUTYRA & MAREK

Two royal octavo volumes, 2151 pages, profusely illustrated, half leather binding, per set **\$15.00 delivered.**

**Send For Our Complete Catalogue of Veterinary Books**

In addition to our own publications, we carry in stock the books of all the other publishers. **EXPRESS CHARGES PREPAID ON ALL ORDERS.**

**CHICAGO MEDICAL BOOK COMPANY**

Honore and Congress Streets, - - - - CHICAGO

**Air-Cushion Rubber Pads**  
 horse-Shoe

IDEALISM IN HORSE-SHOEING.  
 It follows closely nature's scheme in anatomy and physiology, and is therefore correct.



Under the supervision of the skilled Veterinary Surgeon, there is no lameness with  
**AIR CUSHION PADS.**

Don't be deceived by inferior substitutes.

**REVERE RUBBER CO., (Sole Mfrs.)** Boston, New York, Pittsburg, Chicago, San Francisco.

# The Mulford Bacteriological Products

## IMPORTANT NOTICE

Variation from a standard quality is the most common cause of failure to secure satisfactory results from bacterial therapy.

When we realize that the proper preparation of anti-toxins, bacterins, curative serums, and the toxins used as diagnostic agents (tuberculin, mallein, etc.) requires exceptional skill and knowledge, together with a thoroughly up-to-date laboratory equipment insuring all the necessary facilities for scientific research, it becomes evident that the best results cannot be expected from remedies prepared without these exacting requirements.

The H. K. Mulford Company was the first American house to prepare bacteriological remedies, and to-day are the largest makers of these products in the world.

Along this line we are recognized as leaders, our scientific staff is composed of specialists of high attainments.

The Mulford brand stands for but one quality, and that the highest.

Our equipment and close connections with the schools of veterinary medicine and other scientific institutions insure constant touch with this most progressive of the sciences—bacteriology—and further places at our disposal the various strains of pathogenic microorganisms so necessary for the production of effective bacteriologic products.

The above are some of the reasons why Mulford products are everywhere recognized as the standard.

**Dependable results are assured by specifying  
the Mulford Brand**

**H. K. MULFORD CO., Philadelphia**

**Pharmaceutical and Biological Chemists**

New York	St. Louis	Kansas City	Boston	San Francisco	Toronto
Chicago	Atlanta	New Orleans	Dallas	Minneapolis	Seattle

# JUBILEE!

## YOURS and OURS

Congratulations on your 50th Anniversary! We feel a real kinship with you, for this is also our 50th anniversary.

For half a century we have been directing our best ability to your service. We have become noted as possessing the finest veterinary collection in the country, for we have always leaned in your direction.

Nevertheless, you will find our other departments just as well equipped. Fiction, philosophy, poetry are on our shelves—with never a book not to be had. Therefore, we invite your patronage in this field as well. We are also equipped to handle any orders for stationery, printing, engraving, etc. Why not let us send you several of our catalogues?

If you come to New York to the convention, do not fail to pay us a call. You are cordially invited to make our reading rooms your very own.

**Wm. R. Jenkins Company**  
Sixth Avenue at 48th Street, New York

## COMPLETE VOLUMES OF REVIEW FOR SALE.

FOR SALE.—American Veterinary Review. Vols. 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, complete. Clean. Bargain. S. R. Howard, Hillsboro, O.

## VETERINARY LOCATIONS:

Veterinary locations and practices handled in all states. Drug stores for sale and positions in drug stores. Nurses, physicians, dentists, furnished and located for practices. P. V. Knies, R. P., No. 505 Bee Bldg., Omaha, Nebraska. Established 1904.

## A YEAR OF UNPARALLELED SUCCESS

**VACCINE EQUINA.**—The only Specific Vaccine for EQUINE DISTEMPER, Etc., and PNEUMONIA. Immunizing and curative.

**VACCINE AGGRESSIN-MIXED.**—Indicated in Pus-forming conditions generally; also Laryngitis and Pharyngitis.

**DOG DISTEMPER VACCINE.**—Immunizing and curative.

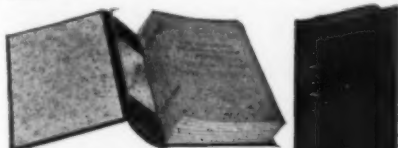
## THE COMPARATIVE VACCINE LABORATORIES, Inc.

Literature on request.

214 Livingston Street, Brooklyn, N. Y.

## THE "BIG BEN" BINDER

The binding of magazines in this binder is as easy as filing papers. No punching of holes is necessary. The bound matter opens flat to any page, even more so than a regularly bound book.



Each binder holds one volume, and any number can be readily removed if it is desired to take a copy to a meeting, etc., to quote from. Put in each number as you get it and you have your numbers bound at the end of each volume.

CLOTH WITH GOLD LETTERING, PRICE, \$1.00

Address **AMERICAN VETERINARY REVIEW**

509 WEST 153d ST., NEW YORK, N. Y.

## Just Enough

and just as they want it. The right way to salt animals is to let them help themselves.

### Compressed Pure-Salt Bricks

In our Patent Feeders, supply refined dairy salt. They mean animal thrift. They cost but little.

Convenient for you and your animals suffer no neglect. Ask your dealer and write us for booklet.



Belmont  
Stable  
Supply Co.  
Patent Feeders, Mfrs.  
Brooklyn,  
N. Y.

# **INDIANA VETERINARY COLLEGE**

CONFERS THE DEGREE OF

**DOCTOR OF VETERINARY MEDICINE**

Write for Catalogue

804 E. Market St.

Indianapolis, Indiana

## **NEW YORK STATE VETERINARY COLLEGE,**

ESTABLISHED AT

**CORNELL UNIVERSITY, ITHACA, N. Y.**

BY CHAPTER 153, LAWS OF 1894.

This college is well equipped with modern facilities for scientific and practical instructions for undergraduates and post-graduates. Most varied practice for students in the free clinics. Regular graded course, three years of nine months each. Entrance by Regents' "Veterinary Student Certificate," or by examination, September 12th, 1913. Matriculation September 22d, 1913.

✻ ✻ ✻ Tuition Free to New York State Students.

For extended announcement address,

Professor VERANUS A. MOORE, Director.

## **THE ST. JOSEPH VETERINARY COLLEGE**

**ST. JOSEPH, MO.**

Thoroughly modern and complete laboratory equipment, unexcelled clinical facilities. Over three thousand clinical cases used for instruction during the past session. Session of 1913 begins September 9. For prospectus and full information, address

**Dr. F. W. CALDWELL**

**7th and Sylvania Sts.**

## **CHICAGO VETERINARY COLLEGE**

**2533, 2535, 2537 and 2539 State Street, Chicago, Ills.**

Organized and Incorporated under the Laws of the State of Illinois, 1883.

Regular Session commences on or about September 15th in each year.

For Prospectus giving all information as to curriculum, fees, etc., address the President

**JOSEPH HUGHES, M.R.C.V.S.,**

**2537 and 2539 State St., Chicago, Ills.**

# **New York State Veterinary College**

Established at

**New York University in the City of New York**

By Chapter 676 Laws of 1913

**FORMERLY NEW YORK-AMERICAN VETERINARY COLLEGE**

(New York College of Veterinary Surgeons, Chartered 1857, and  
American Veterinary College, Chartered 1875).

**SESSION 1913-1914 BEGINS SEPTEMBER 24, 1913**

Free Scholarship to One Student from each Assembly District

**Laboratory Facilities and Clinical Advantages Unsurpassed**

Write for New Catalogue and All Information to

**W. J. COATES, M.D., D.V.S., Dean**

141 West 54th Street

New York City

---

**PULMONARY EMPHYSEMA, "BROKEN WIND,"  
"HEAVES," and all Bronchial Affections  
successfully treated with**

## **VERGOTININE**

"A precious therapeutic product."

—Dr. Gambarotta, Royal Vet. School, Turin.

"The only product capable of ameliorating and curing that disease."—Dr.  
Bernaud, Chief Vet., Compagnie des Voitures Parisiennes l'Urbaine, Paris.

"An energetic reconstituent . . . and dynamic tonic."—Dr. H. Perrin,  
Chief Military Veterinarian.

---

**VERGOTININE** has been used very successfully in America for  
several years in the treatment of the above referred to conditions by a  
large number of veterinarians. Further particulars furnished on request.

---

Sole Distributors for United States, Canada and Mexico

**PASTEUR LABORATORIES OF AMERICA**

New York : 366-368 West 11th St. Chicago : 443-445 So. Dearborn St.



# PETROGEN—WYETH

---

A non-irritating, highly penetrating and soluble medium for the administration of medicaments which ordinarily prove difficult of use because of their irritating properties.

**Petrogen** is particularly well adapted for veterinary practice for the administration of iodine.

**Iodine-Petrogen** will cause no irritation or blistering, nor will its continued application result in a falling out of the hair, or cause any permanent staining.

**Iodine-Petrogen** is indicated in all forms of sprains, stiff joints, shoulder lameness, swellings, bone enlargements, and all conditions where a stimulating action on the glands and blood-vessels is required.

**Iodine-Petrogen** may be employed freely and indefinitely without producing the tendency to blister, which so often precludes entirely the use of the tincture of iodine.

---

LITERATURE AND SAMPLES OF IODINE-PETROGEN, OR OTHER PETROGEN COMBINATIONS, WILL BE SUPPLIED ON REQUEST

---

JOHN WYETH & BROTHER, Inc.

PHARMACEUTICAL CHEMISTS,

PHILADELPHIA

# THE MARK: "NORWICH"

Applied to remedies used in human and veterinary practice, carries with it the guarantee of excellence based on more than a quarter-century of successful manufacture and development of high-grade pharmaceuticals. This applies to our complete line of assayed fluid-extracts, tinctures, hypodermics, ointments, boluses, tablets, etc., as well as to our specialties.

## "A-V-C" BLISTER

Made from fresh, pure materials, according to the formula of the American Veterinary College, this gives results away ahead of mercuric iodide and cantharides preparations. Our facilities for manufacture enable us to offer this superior product at a low cost.

## VETRINOL POWDER

An ideal antiseptic and astringent dusting powder, approved by veterinarians as a superior dry dressing in burns, sores, cuts, wounds and other affections of the skin. It heals rapidly without causing irritation. Furnished in convenient sprinkler boxes.

## THE NORWICH PHARMACAL CO.

Laboratories and Main Offices: Norwich, New York

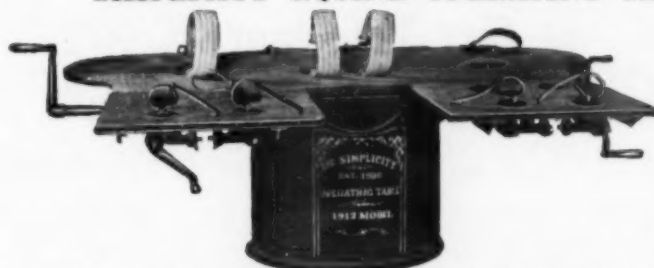
New York City Branch: 60 Beekman St., Corner Gold

Telephones: Beekman 3910 and 3911

Chicago Branch: 1100-1108 W. 37th St.

Kansas City Branch: 1424 Walnut St.

## SIMPLICITY EQUINE OPERATING TABLE



Has all movements necessary for all surgical operations.

The base rests on circular bearings enabling the operator to rotate the field of operation to the light.

By shifting a single lever, the table can be inverted, placing the patient in

position for inferiorly located operations, such as Umbilical Hernia, Scrotal Hernia, etc.

Veterinary Specialty Mfg. Co., Holland, Mich.

THERE IS NOTHING TO EQUAL

## SPRATT'S Dog Cakes and Puppy Biscuit



They are the best in the world and will keep your dog in good condition the year round.

If your puppies are doing "poorly" feed

## SPRATT'S MILK FOOD

Invaluable for weaning, for feeding brood bitches, invalid dogs, etc.

Write for samples and prices, and send 2 cent stamp for "Dog Culture," which contains valuable information.

**SPRATT'S PATENT LIMITED.**

FACTORY AND CHIEF OFFICES  
AT NEWARK, N. J.

# THE OHIO STATE UNIVERSITY

## COLLEGE OF VETERINARY MEDICINE

Columbus, O.

Offers a three year graded course leading to the degree of Doctor of Veterinary Medicine. Unexcelled laboratory and clinical facilities. New buildings especially designed for teaching veterinary medicine according to the most approved modern methods. Faculty of specialists devoting whole time to teaching. For College Bulletins address **DAVID S. WHITE, Dean.**

---

## THE GEORGE WASHINGTON UNIVERSITY

### College of Veterinary Medicine, Washington, D. C.

---

Offers a graded four year course leading to the degree of Doctor of Veterinary Medicine (D.V. M.), beginning with the session 1912-13.

This course is designed for well educated young men employed in the government service or elsewhere during the day. Lectures begin at 5. P. M.

School recognized by American Veterinary Medical Association, U. S. Civil Service Commission, U. S. Bureau of Animal Industry and State Examining Boards.

Clinics, hospitals, military posts, government laboratories and experiment stations located at the National Capital give students superior advantages in acquiring a broad education in veterinary science. For catalog, address

**DAVID E. BUCKINGHAM, V. M. D.**

Dean of Veterinary Faculty, 2113-15 FOURTEENTH ST., N. W.

---

## The Kansas City Veterinary College,

N. W. Corner 15th St. and Lydia Ave.

Kansas City, - - - Missouri.

A three year graded course. Daily clinical instruction. Excellent laboratory equipment. Graduates are eligible to membership in the American Veterinary Medical Association, also eligible to appointment as U. S. Veterinary Inspectors and as U. S. Army Veterinarians. . . .

FOR CATALOGUE, ADDRESS

.... **S. STEWART, Dean.**

---

## UNIVERSITY OF PENNSYLVANIA.

### SCHOOL OF VETERINARY MEDICINE.

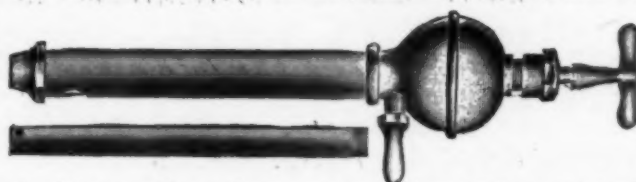
*The course of instruction is graded and extends over three years, with one session beginning the 4th Friday in September, and ending the 3d Wednesday in June in each year.*

Practical Instruction, including Laboratory Work in Pharmacy, Chemistry, General Biology, Histology, Physiology, Comparative Osteology, Dissecting, Botany, Pathology, Bacteriology, and Inspection of Meat and Milk, with personal care and treatment of animals in the hospitals and clinics, is a part of the regular course without additional expense.

Graduates of this school are eligible for membership in the American Veterinary Medical Association.

For Catalogue. Address **LOUIS A. KLEIN, V.M.D.,** Dean of Veterinary Faculty,  
Dept. F, Cor. 39th St. and Woodland Ave., Philadelphia.

## THE SIMPLEX CONTINUOUS FLOW PUMP

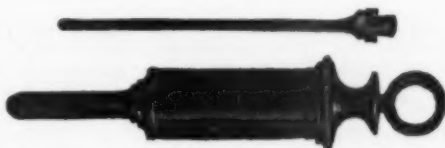


Is made of solid brass and nicely nickel plated. It is an actual continuous flow pump, simple

of construction and easy acting. Gives perfect satisfaction wherever used. Price \$5.25.

### Heavy Brass Dose Syringes

Nickel plated, 2 oz. size, with 2 pipes. \$1.00 each; half dozen, \$5.50; dozen, \$10.00.



New Standard Veterinary Thermometer, with ring to hold cord. Same as recommended by the B. A. I. Price 60c. each; dozen, \$6.00.

**FRANK S. BETZ CO., Hammond, Ind.**

*The Largest Manufacturer in the World of Veterinary, Surgical and Dental Instruments and Supplies. Write for Catalog.*

ESTABLISHED 1851.

INCORPORATED 1897.

## EIMER & AMEND, WHOLESALE DRUGGISTS,

205, 207, 209 and 211 THIRD AVENUE, NEW YORK CITY

MAKE A SPECIALTY OF ALL

**Drugs, Extracts, Tinctures, Chemicals,  
Etc., Etc., Used in Veterinary Practice.**

**E. and A.'s VETERINARY GLYCERIN SUPPOSITORIES.**

**SULFGLYCEROLE FOR SKIN LESIONS.**

**SULFGLYCEROLE OINT. FOR SCRATCHES.**

SOLE AGENTS FOR

**H. HAUPTNER, BERLIN, GERMANY,**

**VETERINARY INSTRUMENTS.**

Write for Catalogue !!!

PASTEUR · NEW YORK · CABLE ADDRESSES · PASTEUR · CHICAGO

PARIS · LONDON · HAVANA · MANILLA · MEXICO · MONTREAL · SIDNEY

# PASTEUR LABORATORIES

OF AMERICA  
BIOLOGICAL PRODUCTS

NEW YORK 366 368 WEST 117<sup>TH</sup> ST.

SAN FRANCISCO

CHICAGO 443 S. DEARBORN ST.

We are the sole concessionaires of the original and only genuine Pasteur's Anthrax Vaccine discovered by Profs. Pasteur, Chamberland and Roux.

For the prevention of Anthrax or Charbon in horses, mules, cattle, sheep and goats. Introduced by us into this country in 1895 and successfully used by veterinarians on over 40,000,000 animals.

#### Antistrangles Serum

For the prevention and cure of true strangles in horses.

#### Antistreptococcic Serum (Veterinary)

Indicated in all conditions due to streptococcus infection; notably Influenza, Distemper, Shipping Fever, Purpura, Hemorrhagica or Equine Anasarca. Furnished in liquid and dry form, the latter keeping indefinitely.

#### Antitetanic Serum (Veterinary)

The most reliable cure for Tetanus and an infallible preventive of that disease. Furnished in liquid and dry form, the latter keeping indefinitely.

#### Mallein and Mallein Solution

For the diagnosis of Glanders in horses and mules. Mallein Solution is ready for use and is furnished in one, two and five-dose packages.

#### Tuberculin and Tuberculin Solution

For the diagnosis of Tuberculosis. Tuberculin Solution is ready for use as sold and is furnished in one, two and five-dose packages.

#### Antivenomous Serum

Exerts a specific action against the venom of all species of poisonous reptiles. In dry and liquid form.

#### Blackleg Vaccine, Powder Form

#### Blackleg Vaccine, Cord Form

#### Blackleg Vaccine, Pellet Form

We are the sole concessionaires of the original and only genuine Blackleg Vaccine for the prevention of Blackleg in Cattle.

Produced exclusively for us by the discoverers, Professors Arloing, Cornevin and Thomas' heritiers. Furnished in the powder, cord, and pellet form and the single and double treatment. The latter should be used whenever possible and invariably upon pure-bred, highly-graded, or valuable stock. Successfully used by veterinarians on over 75,000,000 head.

#### Canine Distemper Serum

Principally a curative agent for Canine Distemper. It also confers a limited immunity.

#### Polyvalent Calf Dysentery Serum.

#### Hog Cholera Serum.

#### Eucamphol

An ideal Antiseptic, Disinfectant and Germicide. It is a compound of Eucalyptus Oil, Camphor Oil and Cresol, and is indicated in daily practice.

#### Lincoln Disinfectant

For general and extensive disinfecting; compares favorably with any general disinfectant on the market.

#### Traumatol (Iodocresine)

A powerfully Antiseptic, Cicatrisant and non-toxic Microbicide. Furnished in Solution, Powder and Vaseline.

#### Pasteur Laboratories Rat Virus

For the scientific destruction of rats, mice and moles. Harmless to human beings, domestic animals, birds, etc.

# JUST PUBLISHED

## BOVINE TUBERCULOSIS AND ITS CONTROL

By VERANUS ALVA MOORE, B. S., M. D., V. M. D.

Professor of Comparative Pathology and Bacteriology,  
New York State Veterinary College, at Cornell University.

It has seemed for those who are intelligently working to eradicate this scourge, benefit would be derived from bringing together the results of the more important investigations on the nature, diagnosis and various methods for the control of this disease. It is well to keep in mind the words of the great Pasteur: "It is within the power of man to eliminate the infectious diseases from the face of the earth." To accomplish this for Tuberculosis requires full knowledge of its cause, morbid anatomy, means by which it is disseminated and methods for its control.

Pages X + 164 and 30 full page plates. Cloth. \$2.00 net Postpaid.  
The illustrations are unexcelled by those in any Medical Text-book.

---

### VETERINARY PUBLICATIONS

The Pathology and Differential Diagnosis of Infectious Diseases of Animals. Moore . . . . .	\$4.00
The Principles of Microbiology. Moore . . . . .	\$3.50
Veterinary Obstetrics. Williams . . . . .	\$8.00
Surgical and Obstetrical Operations. Williams . . . . .	\$2.50
Veterinarian's Handbook of Materia Medica and Therapeutics. Udall. . . . .	\$1.50
General Surgery. Frohner translated by Udall . . . . .	\$3.00
Veterinary Doses and Prescription Writing. Fish . . . . .	\$1.50
Examination of the Urine of the Horse and Man. Fish . . . . .	\$1.50
Elementary Exercises in Physiology. (Laboratory Manual) Fish . . . . .	\$1.50
Elementary Exercises in Materia Medica and Pharmacy. (Laboratory Manual) Fish . . . . .	\$1.50
The Clinical Pathology of the Blood of Domesticated Animals. Burnett . . . . .	\$2.50
Pure Milk and the Public Health. Ward . . . . .	\$2.00

ABOVE PRICES NET, POSTPAID

**CARPENTER & CO.**  
Ithaca, N. Y.



## RESTRAINT OF DOMESTIC ANIMALS.

### A Book for Students and Practitioners

By GEORGE R. WHITE, M. D., D. V. S., Nashville, Tenn.

Over 300 pages, with 332 illustrations made from drawings by one of the best pen artists in the United States. It illustrates and fully describes every known means of **RESTRAINT** of the Horse, Ox, Dog and Hog. This is by far the **best illustrated book** ever written in America on any branch of Veterinary Science. Published by the Author. For sale by all veterinary booksellers. Sent post or express prepaid to any address upon receipt of price.

"**Restraint of Domestic Animals**" has already been adopted as a **Text Book** in 18 of the 21 Veterinary Colleges of America. Its sale has been phenomenal.

Every practitioner should secure a copy for study and reference. **PRICE, \$3.75.**

## Red • Ball • Brand • Stock • Food.

Purely Vegetable. Not a Secret Preparation. List of Ingredients Sent to Veterinarians on Application.

Sold to Veterinary Surgeons in Bulk, they can make it into appropriate powders of 1 oz. to a dose.

The most Uniformly Successful Digestive Regulator Known.

Veterinarians throughout the country are using it and testifying to their successful treatment of digestive disorders.

Write for Circulars, Price List and Sample Package to

**ATKINS & DURBROW,**

157 WATER STREET

NEW YORK.

## DOCTOR, ARE YOU, AS A VETERINARIAN ALLIED TO THE HORSE

As your chief practice and income. If so, **Promote Horsebreeding and Improvement.** Become identified with **THE LIVE STOCK JOURNAL.** The one great paper. The Draft and Coach Horse Journal of America.

**In our Campaign For All Allied Horse Interests to Boost Horse Breeding**

As the greatest prosperity of the nation to breed more good horses to supply the great market demand, or the work must be done by the automobile and truck that help but little in the world's work.

Horses are in greatest demand and highest prices ever known. We must have more good horses for city and farm teams and the export trade. To maintain and develop the veterinary interest in America.

Give us your co-operation. Use the Live Stock Journal, 2 years for \$1.00. Ten annual Subscribers, \$2.50. Write for free sample copies. Address

**LIVE STOCK JOURNAL, HYDE PARK, CHICAGO**



Puppies are Nature's Babies and need Right Food at the beginning. Veterinarians know how often they are called upon to suggest the Right Food. **Maltoid Milk-Bone Puppy Meal**, fed according to free directions we supply, is unrivalled for weaning and rearing, and fills this need.

**MALTOID MILK-BONE** is superior in shape, quality and effect to any other dog food heretofore offered. All breeds thrive on it wonderfully, and thus it saves all feeding cares.

Veterinarians at a loss to recommend a complete food, should test **MALTOID MILK-BONE**. It is a superb conditioner.



Used by veterinary colleges, zoological parks, U. S. Animal Quarantine, and many high class institutions;

If you did not obtain a sample at the 50th Anniversary Convention at Hotel Astor, we will supply you upon request.

**MALTOID MILK-BONE** is sold by leading dealers in prominent cities.

**F. H. BENNETT BISCUIT CO.,**

139 Avenue D, N. Y. City

## PHILLIPS VETERINARY SPECIALTIES.



Phillips "Perfected" Stomach Tube.  
Phillips Soft Rubber Catheter.  
Phillips "Continuous Stream" Injection Pump.  
Phillips "Faultless" Decayed Root Extractor.

Beware of  
imitations  
and so-called  
Phillips  
Tubes.



### PHILLIPS "PERFECTED" STOMACH TUBE.

In the May, 1904, number of the AMERICAN VETERINARY REVIEW, I wrote an article introducing the operation of siphoning the stomach of the horse for the instant relief and positive cure of Stomach Flatulence, Acute Indigestion, Gastritis and Choke.

To insure the operation becoming a success in every surgeon's hands, I had a tube of superior quality manufactured, having correct dimensions, consistency and certain markings, and styled it THE PHILLIPS "PERFECTED."

The success of the operation is unquestionably proven by public demonstrations at State and International Meets, by the Veterinary Colleges teaching and recommending the operation, by imitations manufactured and sold by Veterinary Supply houses, by other tubes manufactured that are complicated in structure and difficult to pass, and proven also by the fact that most veterinary instrument dealers have made a stomach tube their leading add since one year after The Phillips "Perfected" had proven its success.

The Phillips "Perfected" Tube with the accompanying Stilet furnishes the Surgeon with the finest Probang ever offered to the profession. Directions for using accompany each tube. Price \$8.00, less dealers discount of 25%, \$6.00 Cash.

### PHILLIPS SOFT RUBBER CATHETER.

PHILLIPS SOFT RUBBER CATHETER IS OF SUPERIOR quality, four feet long. Neither heat nor cold affect it. Its life with constant usage is from five to ten years. Used as a Tourniquet in foot operations it has no equal. Directions for using and stilet accompany each catheter. Price \$1.75, less dealers discount of 25%, \$1.31 Cash.

### PHILLIPS "CONTINUOUS STREAM" PUMP.

PHILLIPS "CONTINUOUS STREAM" STOMACH AND RECTAL INJECTION PUMP is made of solid brass, nickel plated, simple of construction and easy acting. This pump should accompany every Phillips "Perfected" Tube. No one should practice siphoning the stomach without using an injection pump. Attached to the tube it makes an IDEAL RECTAL INJECTION outfit. Price \$8.00, less dealers discount of 30%, \$5.60 Cash.

### PHILLIPS "FAULTLESS" DECAYED TOOTH EXTRACTOR.

The only extractor that operates within the alveolar cavity. Made expressly for roots and shells. Price \$8.00, less dealers discount of 30%, \$5.60 Cash. Send for circular for complete description of these Specialties.

Address all orders to, J. M. PHILLIPS, D. V. S.,

3732 WEST PINE BL'VD, ST. LOUIS, MO.

## "Combination" Veterinary Dental and Surgical Halter.



PATENTED MAY 13, 1901.

The features which make it the halter par excellence for operations upon the teeth are, A, the "lip strap," to which the pillar or side reins are attached, which suspend the head at the proper height, and prevent it from going to one side or the other, and B, the non-compressible, metal, heavily padded "nose band," with offsets, keeping the cheek pieces of the halter  $\frac{1}{2}$  to 3 inches from the cheeks, thus avoiding any interference whatever with the dental instruments while being employed upon the teeth. This excellent adjunct to the Veterinarian's outfit, is made of the very finest of russet stock, with brass mountings throughout. The cheek pieces are very strong, being double; the lip strap is covered with fine white rubber; the strap buckling into it being finished rawhide. The piece into which the substantial martingale is snapped is of forged steel, heavily coated with aluminum enamel, which is rust proof. Altogether, it is a handsome, and from a practical standpoint, indispensable appliance in veterinary dentistry.

#### Directions for its application.

After backing the horse into his stall in the usual manner for work upon the teeth, drop off the stable halter and apply the "Combination" halter to the head; unbuckle the lip-strap on one side, and pass it *inside the nose-band*, under the upper lip over the incisor teeth and buckle quite tight. Elevate the head by fixing the side or pillar reins to the stall-posts on each side as high up as you can reach; raising the nose a couple of feet higher than you desire it for operating; then tighten the strap leading to the surcingle which is provided with a buckle, thereby lowering the nose to a height convenient to the operator, and he positively cannot move, and you can operate upon the teeth with an ease and precision that is most satisfying.

(For side-lines, 5 yards sash-cord, cut in two, snaps on one end.)

Price of Halter, \$10.00. For further particulars address T. C. D. F., Hamilton Grange Branch, New York P. O.

# BACILLOL

has been approved in competent literature as a germicide and as the most economical disinfectant, antiseptic and deodorant, whose invariable composition is assured by constant scientific supervision. The fact that it will readily saponify is an absolutely reliable guarantee of its prompt germicidal effect which wholly distinguishes it from the soluble Cresols now in the market, in regard to which it is known that they will not saponify.

**Prof. Dr. Liebreich** says :

The strong disinfecting qualities and the relative non-poisonousness of Bacillol should alone be an inducement to employ it. Besides these merits it deserves mention that it is much more agreeable to manipulate with this preparation than with others of a similar kind, because it makes instruments and utensils less slippery. Also the smell of "Bacillol" disappears readily, which is certainly a quality of some consideration in the treatment of the sick, and particularly for midwifery.

These are features which distinguish "Bacillol" advantageously from other disinfectants, the more so as its economical side claims special attention.

## Bacillol Vaginal Preparations

are acknowledged to be a Specific against Vaginal Catarrh, an infectious disease (see "American Veterinary Review," No. 1, 1907), the modes of application being as follows :

### BACILLOL Vaginal Sticks

These are cut up, in accordance with the graduations, into pencils which can be easily handled and thus provide an economical treatment, more particularly for the live stock of large cattle owners.

### BACILLOL Vaginal Cartridges

are frequently given the preference, especially for saving time, because they are easily applied. Both modes of treatment insure the radical and prompt eradication of the infectious vaginal catarrh.

### BACILLOL Cartridges for Dysentery in Calves

have successfully stood the test as a remedy for the prevention of Dysentery in calves, applied by introducing a few cartridges into the genital canals of the brood animal shortly before calving. The simplest, most reliable and most economical treatment for the prevention of Dysentery in calves.

Obtainable in the trade and from  
**Bruno Grosehe & Co.**  
4 & 6 Jones Lane, New York

46

A

THA

2

Sample  
Full  
on Re

“

A

TH

0-100-00



# "CHINOSOL"

A MORE POWERFUL ANTISEPTIC  
THAN BICHLORIDE OF MERCURY

But

- 1 Non-poisonous
- 2 Does not coagulate albumin
- 3 Does no injury to membranes
- 4 Does no damage to tissues



- 5 Does not break down granulation
- 6 Causes no irritation
- 7 Has marked analgetic power
- 8 An instantaneous deodorant
- 9 Costs about three cents a quart

Sample and  
Full Literature  
on Request

CHINOSOL CO.  
PARMELE PHARMACAL CO.  
54 SOUTH ST., N. Y.

Abscesses

Inflamed  
Glands

Periostitis

Bog Spavin

Capped Knee

Infected  
Wounds

Harness  
Galls

Bruises



Burns

Distemper

Pneumonia

Caked Bag

Orchitis

Sprains

Scratches

Tendonitis

**For Any Inflammatory Condition. Apply Hot and Thick  
Cover With Absorbent Cotton**

Booklet and Spatula on Request



# **We PROVED the Phylacogens**

Before we placed a single dose of our Veterinary Phylacogens on the market, for more than a year our Veterinary Department of Experimental Medicine conducted a series of searching clinical tests of those products, submitting large quantities of both Phylacogens\* to skilled veterinarians in various parts of the United States.

Extensive experiments were also carried on under the personal supervision of our own veterinarians at various stock-yards and sale-stables in several large cities of the country.

Careful and complete records were kept of all cases treated. A summary of those records affords conclusive evidence of the therapeutic value of the Phylacogens.

\*Pneumonia Phylacogen (Veterinary) and Mixed Infection Phylacogen (Veterinary).

**Ask for Our Booklet on Veterinary Phylacogens.**

Home Offices and Laboratories,  
Detroit, Michigan.

**PARKE, DAVIS & CO.**

## **McKILLIP VETERINARY COLLEGE, CHICAGO.**

(CHARTERED 1892.)

**The faculty has been reorganized and strengthened by the addition of several specialists of national reputation.**

The equipment of this college is complete in every detail, furnishing the best opportunities for scientific and practical education.

**LARGEST PRACTICE IN THE WORLD.**

**Regular Graduate Course, acquiring the degree of Doctor in Veterinary Medicine.**

**Post-Graduate Course, acquiring the degree of Doctor in Veterinary Medicine.**

**School opens September 10th, 1913.**

Write for catalogue and other information

**GEORGE B. McKILLIP, M. D. V., Secretary,**

**No. 1639 Wabash Avenue, Chicago.**

